BUILDING CODE

RECOMMENDED BY

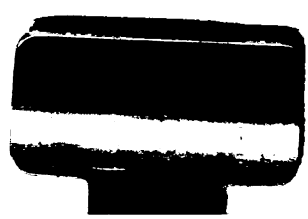
THE NATIONAL BOARD

OF

FIRE UNDERWRITERS

EDITION

1905.



BUILDING CODE

RECOMMENDED BY

The National Board of Fire Underwriters

Providing for all matters concerning, affecting or relating to the construction, alteration, equipment, repair or removal of buildings or structures erected or to be erected

EDITION 1905

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In the belief that good construction should be recognized as of the utmost importance in every city and town, this Building Code, as prepared and recommended, has been based upon broad principles, hoping to impress upon municipal authorities everywhere their grave responsibility in enacting and enforcing laws for the protection of life and property.

The Code is necessarily somewhat voluminous owing to the efforts of the Committee to provide for conditions existing in towns as well as cities.

The benefit to be derived from uniform building laws throughout the country leads us to urge the adoption of the Code in its entirety. In small towns or cities where there is no Department of Buildings, it might be enforced through a Bureau of Buildings, under the jurisdiction of the Fire Department, the words "Commissioner of Buildings" being changed to "Superintendent" or "Inspector of Buildings." In like manner other provisions could be changed to meet local requirements, at the same time maintaining the essential recommendations.

In the presentation of these suggestions for a Building Code, the Committee realizes that perfection has not been attained. In soliciting criticisms it became apparent that changes might be made indefinitely. The Committee, therefore, has decided to present the Code in this form, knowing that the National Board of Fire Underwriters will closely follow the evolution of building construction and the introduction of new material and patent devices, and through amended editions be able in the future to suggest to the public the newest and safest methods of construction.

The members of the Committee appreciate the assistance of those who have contributed suggestions, and especially do they recognize the valuable help rendered by Mr. F. C. Moore, former Chairman of the Committee, and Mr. John Stephen Sewell, Captain Corps of Engineers, United States Army, who have so willingly given the benefit of their expert knowledge and experience.

C. G. SMITH, Chairman,

GEORGE R. CRAWFORD, B. R. STILLMAN,
C. S. HOLLINSHEAD, EVERETT U. CROSBY,
A. G. McILWAINE, Jr., N. S. BARTOW,

Committee on Construction of Buildings,
National Board of Fire Underwriters.

May, 1905.

BUILDING CODE

The City Council of the city of.....
do ordain as follows:

PART I.

A REMEDIAL ORDINANCE.

SECTION 1.

This Ordinance to be Known and Cited as the Building Code.

The following provisions shall constitute and be known as The Building Code, and may be cited as such and presumptively provides for all matters concerning, affecting or relating to the construction, equipment, alteration, repair or removal of buildings or structures erected or to be erected in the city of.....

SECTION 2.

Building Code a Remedial Ordinance.

This ordinance is hereby declared to be remedial, and is intended to secure the beneficial interests and purposes thereof.

PART II.

PRELIMINARY REQUIREMENTS.

SECTION 3.

New Buildings and Buildings to be Altered.

New buildings to conform to Code.

No wall, structure, building, or part thereof, shall hereafter be built or constructed, nor shall the plumbing, drainage, piping or wiring of any building, structure or premises, be constructed or altered, in the city of ..... except in conformity with the provisions of this Code.

Alterations to buildings to conform to Code.

No building already erected, or hereafter to be built, in said city, shall be raised, altered, moved or built upon in any manner, that would be in violation of any of the provisions of this Code, or the approval issued thereunder.

SECTION 4.

Filing Plans and Statements.

Preliminary requirements.

Before the erection, construction or alteration of any building or part of any building, structure, or part of any structure, or wall, or any platform, staging or flooring to be used for standing or seating purposes, and before the construction or alteration of the plumbing, drainage, piping or wiring of any building, structure or premises is commenced,

Persons authorized to act.

The owner or lessee, or agent of either, or the architect or builder employed by such owner or lessee in connection with the proposed erection or alteration,

Shall submit to the commissioner of buildings—

Detailed statements.

A detailed statement in triplicate of the specifications, on appropriate blanks to be furnished to applicants by the Department of Buildings,

And a full and complete copy of the plans of such proposed work, Plans.

And such structural detail drawings of said proposed work as the commissioner of buildings may require, Detail drawings.

All of which shall be accompanied with a statement in writing, sworn to before a notary public or commissioner of deeds, giving the full name and residence, street and number, of the owner, or of each of the owners of said building, or proposed building, structure or proposed structure, premises, wall, platform, staging or flooring. Name and residence of owners to be given.

If such erection, construction or alteration, plumbing, drainage, piping or wiring, or the alteration thereof, is proposed to be made or executed by any other person than the owner or owners of the land in fee, the person or persons intending to make such erection or alteration, or to construct such plumbing, drainage, piping or wiring, shall accompany said detailed statement of the specifications and copy of the plans, with a statement in writing, sworn to as aforesaid, giving the full name and residence, street and number, of the owner or owners of the land, or proposed building, structure, or proposed structure, premises, wall, platform, staging or flooring, either as owner, lessee, or in any representative capacity, and that he or they are duly authorized to perform or have performed said work. When by a lessee or other than an owner.

Such statement may be made by the agent, or architect of the person or persons hereinbefore required to make the same. Architect or agent may make statement.

Any false swearing in a material point in any statement submitted in pursuance of the provisions of this section shall be deemed perjury, and shall be punishable as such. False swearing.

Statements and plans to be kept on file.

Said sworn statement, and detailed statement of specifications, and copy of the plans shall be kept on file in the office of the commissioner of buildings.

Work not to be commenced until statements and plans are approved.

And the erection, construction, or alteration of said building, structure, wall, platform, staging or flooring, or any part thereof, and the construction or alteration of the said plumbing or drainage, shall not be commenced or proceeded with, until said statements and plans shall have been so filed, and approved by the commissioner of buildings,

Work to be executed according to approved statements and plans.

And the erection, construction or alteration of such building, structure, platform, staging or flooring, and the construction or alteration of such plumbing or drainage when proceeded with shall be constructed in accordance with such approved detailed statement of specifications and copy of plans.

Approval of a portion of statements and plans.

Nothing in this section shall be construed to prevent the commissioner of buildings from granting his approval for the erection of any part of a building, or any part of a structure, where plans and detailed statements have been presented for the same before the entire plans and detailed statements of said building or structure have been submitted.

Time Limit for Permits.

One year, if work is not commenced.

Any approval which may be issued by the commissioner of buildings pursuant to the provisions of this section, but under which no work is commenced within one year from the time of issuance, shall expire by limitation.

Ordinary Repairs.

No permit necessary therefor.

Ordinary repairs of buildings or structures, or of the plumbing or drainage thereof, may be made without notice to the Department of Buildings, but such repairs shall not be construed to include the cutting away of

any stone or brick wall, or any portion thereof, the removal or cutting of any beams or supports, or the removal, change or closing of any staircase, or the alteration of any house sewer or private sewer or drainage system, or the construction of any soil or waste pipe.

Code Applies to Municipal and Private Buildings.

The foregoing provisions and all the provisions of this Code shall apply with equal force to buildings, both municipal and private. With equal force.

Approval or Rejection of Plans.

It shall be the duty of the commissioner of buildings to approve or reject any plan filed with him pursuant to the provisions of this section within a reasonable time. Within a reasonable time.

SECTION 5.

Demolishing Buildings.

When plans and detailed statements are filed in the Department of Buildings for the erection of a new building, if an existing building or part of an existing building is to be demolished, such fact shall be stated in the statement so filed. An existing building to be stated.

In demolishing any building, story after story, commencing with the top story, shall be completely removed. No material shall be placed upon the floor of any such building in the course of demolition, but the brick, timbers and other structural parts of each story shall be lowered to the ground immediately upon displacement. Method of demolishing.

The material to be removed shall be properly wet down to lay the dust incident to its removal. Sprinkled.

Notice to be given of intended demolition.

The owner, architect, builder or contractor for any building, structure, premises, wall, platform, staging or flooring to be demolished shall give not less than twenty-four hours' notice to the Department of Buildings of such intended demolition.

PART III.

DEFINITIONS.

SECTION 6.

Measurement of Height for Buildings and Walls.

Points to compute height.

The height of buildings shall be measured—

From the curb level at the center of the front of the building to the top of the highest point of the roof beams in the case of flat roofs,

For flat roof buildings.

For high-pitched roof buildings.

And for high-pitched roofs the average of the height of the gable shall be taken as the highest point of the building.

Blocking up on level roof beams.

In the case of flat roofs the measurement for height shall not preclude placing the roof beams level at the ceiling line and blocking up above the beams to get a proper pitch for water on the roofing.

For walls on girders.

In case a wall is carried on iron or steel girders or iron or steel girders and columns, or piers of masonry, the measurements, as to height for the wall, may be taken from the top of such girder.

For walls of buildings which do not adjoin street.

When the walls of a structure do not adjoin the street, then the average level for the ground adjoining the walls may be taken instead of the street curb level for the height of such structure.

SECTION 7.

Measurement for Width and Depth of Buildings.

For the purposes of this Code—

Length. The greatest horizontal dimension of any building shall be considered its length,

Width. And the next greatest horizontal dimension its width.

SECTION 8.

Private Dwelling, Definition Of.

Residence of not more than two families. A private dwelling shall be taken to mean and include every building, which shall be intended or designed for, or used as, the home or residence of not more than two separate and distinct families or households, and in which not more than fifteen rooms shall be used for the accommodation of boarders, and no part of which structure is used as a store or for any business purpose.

Limiting number of rooms for boarders.

Connected dwellings for boarding purposes. Two or more such dwellings may be connected on each story when used for boarding purposes, provided the halls and stairs of each house shall be left unaltered.

Percentage of lot occupied. Any such building hereafter erected shall not cover more than ninety per cent of the lot area.

SECTION 9.

Apartment House, Definition Of.

Buildings occupied by three or more families. An apartment house shall be taken to mean and include every building, which shall be intended or designed for, or used as the home or residence of three or more families or households living independently of

each other, and in which every such family or household shall have provided for it a parlor or sitting room, a dining room, not less than two bedrooms, a kitchen and a toilet room containing a set bath tub and water closet, each room being separate and apart from any other.

Percentage of lot occupied.

Any such building hereafter erected shall not cover any greater percentage of a lot than is specified in Section 53 of this Code.

Light and ventilation.

The requirements for light and ventilation for an apartment house shall also apply to a tenement house.

Classification of building.

Upon the filing of plans for any building which shall be intended or designed for the occupancy of three or more families, as in this section provided for, the commissioner of buildings shall decide whether such a building is an apartment house or a tenement house, according to the circumstances of the case.

SECTION 10.

Tenement House, Definition Of.

Buildings occupied by three or more families.

A tenement house shall be taken to mean and include any building or portion thereof which shall be intended or designed for, or is rented, leased, let or hired out as the home or residence of three families or more living independently of each other and doing their cooking upon the premises, or by more than two families upon any floor, so living and cooking, but having a common right in the halls, stairways, yards, water closets or privies, or some of them.

Percentage of lot occupied.

Any such building hereafter erected shall not cover any greater percentage of a lot than is specified in Section 53 of this Code.

Light and ventilation.

The requirements for light and ventilation for a tenement house shall also apply to an apartment house.

SECTION 11.

Lodging House, Definition Of.

A lodging house shall be taken to mean and include any house or building or portion thereof in which persons are harbored or lodged for hire for a single night or for less than a week at any one time, or any part of which is let for any person to sleep in, for any term less than a week. Buildings in which persons are lodged by the day or week.

Any such building hereafter erected shall not cover any greater percentage of a lot than is lawful for a hotel, as specified in Section 12 of this Code. Percentage of lot occupied.

SECTION 12.

Hotel, Definition Of.

A hotel shall be taken to mean and include every building, or part thereof, intended, designed or used for supplying food and shelter to residents or guests, and having a general public dining room or a café, or both, and containing also more than fifteen sleeping rooms above the first story. Buildings supplying food and shelter to persons. Number of rooms.

An apartment hotel shall be taken to mean and include every hotel in which the apartments are rented or are intended or designed to be rented in suites, and for terms not less than one month, and in which there are no kitchens, dining rooms or serving rooms within the apartments, but where a common dining room is provided for the use of the tenants. Apartment hotel, definition of.

Whenever any such hotel or apartment hotel building hereafter erected shall be located on any other than a corner lot or plot, it shall not cover in the aggregate more than 90 per cent. of the area of such lot or plot at and above the second story floor level, if not more than Percentage of lot occupied. On an inside lot.

four stories in height, and one and one-half per cent. less for every story in height, commencing at and above the second story floor level, and on a corner lot, when covering an area of not more than 3,000 square feet, it shall not occupy more than 95 per cent. of the area of such lot at and above the second story level. In case any such building is to occupy a number of lots, the commissioner of buildings may allow the free air space, proportioned as herein stated, to be distributed in such manner as, in his opinion, will equally as well secure light and ventilation.

On a corner lot.

Free air space may be distributed.

SECTION 13.

Office Building, Definition Of.

Rooms for business purposes.

An office building shall be taken to mean and include every building which shall be divided into rooms above the first story, and be intended and used for office purposes, and no part of which shall be used for living purposes, excepting only for the janitor and his family.

Occupation of Area of Inside Lot Limited.

Percentage of lot occupied.

Office buildings when not erected on a corner shall not cover more than 90 per cent. of the lot area, at and above the second story floor level.

SECTION 14.

Frame Building, Definition Of.

Meaning of term.

A frame building shall be taken to mean a building or structure of which the exterior walls or a portion thereof shall be constructed of wood.

Buildings sheathed with boards, and partially or entirely covered with four inches of brick or stone work, shall be deemed to be frame buildings. Veneered frames.

Wood frames covered with metal, whether the frames are sheathed or not with boards, shall be deemed to be frame structures. Wood frame and metal covering.

PART IV.

QUALITY OF MATERIALS.

SECTION 15.

Brick.

The brick used in all buildings shall be good, hard, well burnt brick. Quality.

When old brick are used in any wall they shall be thoroughly cleaned before being used, and shall be whole and good, hard, well burnt brick. Old brick.

Sand.

The sand used for mortar in all buildings shall be clean, sharp grit sand, free from loam or dirt, Quality.

And shall not be finer than the standard samples kept in the office of the Department of Buildings. Standard samples.

SECTION 16.

Lime Mortar.

Slaked lime mortar shall be made of one part of lime paste and not more than four parts of sand. Component parts.

Quality. All lime used for mortar shall be thoroughly burnt, of good quality, and properly slaked before it is mixed with the sand.

Cement Mortar.

Component parts. Cement mortar shall be made of cement and sand in the proportion of one part of cement, and not more than three parts of sand, and shall be used immediately after being mixed.

Measured and mixed. The cement and sand are to be measured and thoroughly mixed before adding water.

Fineness. Cements must be very finely ground and free from lumps.

Cement and Lime Mortar.

Component parts. Cement and lime mortar mixed shall be made of one part of slaked lime paste, one part of cement and not more than three parts of sand to each, the quality of the respective parts to accord with the requirements before stated in this Section.

Quality.

SECTION 17.

Cements.

Portland cement. Portland cement shall be held to mean such cement as shall consist of a mixture of argillaceous and calcareous materials, calcined together and subsequently ground to an impalpable powder, and thereafter to receive no addition of other substances except a maximum of two per cent of gypsum or lime for the purpose of regulating the setting, and when tested neat, after one day set in air, be capable of sustaining without rupture a tensile strain of at least 120 pounds per square inch, and after one day in air and six days in water shall be capable of sustaining without rupture a tensile strain of at least 300 pounds per square inch.

Required strength.

Other than Portland cement. Cements other than Portland cement shall be considered to mean such cement as will, when tested neat, after one day set in air be capable of sustaining with-

out rupture a tensile strain of at least 60 pounds per square inch, and after one day in air and six days in water be capable of sustaining without rupture a tensile strain of at least 120 pounds per square inch. Required strength.

Tests of Cements.

Said tests are to be made under the supervision of the Commissioner of Buildings, at such times as he may determine, and a record of all cements answering the above requirements shall be kept for public information. Record of tests.

SECTION 18.

Concrete.

Concrete for foundations shall be made of at least one part of cement, two parts of sand and five parts of clean broken stone, of such size so as to pass in any way through a two-inch ring, or good clean gravel may be used in the same proportion as broken stone. Component parts.

The cement, sand and stone or gravel shall be measured and mixed as is prescribed for mortar. Measured and mixed.

All concrete shall be properly rammed into place and allowed to set without being disturbed. Ramming.

SECTION 19.

Quality of Timber.

All timbers and wood beams used in any building shall be of good sound material free from rot, large and loose knots, shakes, or any imperfection whereby the strength may be impaired, Sound and good.

Requisite sizes. And be of such size and dimensions as the purpose for which the building is intended requires.

SECTION 20.

Tests of New Materials.

Character and quality to be determined. New structural material of whatever nature shall be subjected to such tests to determine its character and quality, as the Commissioner of Buildings shall direct;

Tests as may be directed. The tests shall be made under the supervision of the Commissioner of Buildings, or he may direct the architect or owner to file with him a certified copy of the results of tests, such as he may direct shall be made.

SECTION 21.

Structural Material.

Quality and strength. WROUGHT IRON. All wrought iron shall be uniform in character, fibrous, tough and ductile. It shall have an ultimate tensile resistance of not less than 48,000 lbs. per square inch, an elastic limit of not less than 24,000 lbs. per square inch, and an elongation of twenty per cent. in eight inches, when tested in small specimens.

Quality and strength. STEEL. All structural steel shall have an ultimate tensile strength of from 54,000 to 64,000 pounds per square inch. Its elastic limit shall be not less than 32,000 pounds per square inch and test specimens, ruptured in tension, must show a minimum elongation of not less than 20 per cent. in eight inches. Rivet steel shall have an ultimate strength of from 50,000 to 58,000 pounds per square inch.

Quality. CAST STEEL. Shall be made of open hearth steel containing one-quarter to one-half per cent. of carbon,

not over eight one-hundredths of one per cent. of phosphorus and shall be practically free from blow holes.

CAST IRON. Shall be of good foundry mixture, producing a clean, tough, gray iron. Sample bars five feet long, one inch square, cast in sand molds, placed on supports four feet six inches apart, shall bear a central load of 450 pounds before breaking. Castings shall be free of serious blow holes, cinder spots, and cold shuts. Ultimate tensile strength shall be not less than 16,000 pounds per square inch when tested in small specimens. Quality and strength.

PART V.

EXCAVATIONS AND FOUNDATIONS.

SECTION 22.

Excavations.

All excavations for buildings shall be properly guarded and protected so as to prevent the same from becoming dangerous to life or limb— Guarded and protected.

And shall be sheathe-piled by the person or persons causing the excavations to be made when necessary to prevent the adjoining earth from caving in. Sheathe-piled.

Plans filed in the Department of Buildings shall be accompanied by a statement of the character of the soil at the level of the footings. Statement of character of soil.

Whenever an excavation of either earth or rock for building or other purposes, shall be intended to be, or shall be carried to the depth of more than ten feet below the curb, the person or persons causing such excavation to be made shall at all times, from the commencement until the completion thereof, if afforded the necessary When depth of excavation is more than ten feet.

license to enter upon the adjoining land and not otherwise, at his or their own expense preserve any adjoining or contiguous wall or walls, structure or structures from injury, and support the same by proper foundations, so that the said wall or walls, structure or structures, shall be and remain practically as safe as before such excavation was commenced, whether the said adjoining or contiguous wall or walls, structure or structures, are down more or less than ten feet below the curb.

Protect adjoining walls.

Duty of adjoining owner.

If the necessary license is not accorded to the person or persons making such excavation, then it shall be the duty of the owner or owners refusing to grant such license to make the adjoining or contiguous wall or walls, structure or structures, safe, and support the same by proper foundations so that adjoining excavations may be made, and shall be permitted to enter upon the premises for that purpose, when necessary, where such excavation is being made.

When depth of excavation is ten feet or less.

If such excavation shall not be intended to be, or shall not be, carried to a depth of more than ten feet below the curb, the owner or owners of such adjoining or contiguous wall or walls, structure or structures, shall preserve the same from injury, and so support the same by proper foundations that it or they shall be and remain practically as safe as before such excavation was commenced, and shall be permitted to enter upon the premises for that purpose, when necessary, where such excavation is being made.

Adjoining Walls.

By whom protected.

In case an adjoining party wall is intended to be used by the person or persons causing the excavation to be made, and such party wall is in good condition and

sufficient for the uses of the adjoining building, then and in such case the person or persons causing the excavations to be made shall, at his or their own expense, preserve such party wall from injury and support the same by proper foundations, so that said party wall shall be and remain practically as safe as before the excavation was commenced.

On neglect or failure to protect.

If the person or persons whose duty it shall be to preserve or protect any wall or walls, structure or structures from injury shall neglect or fail so to do after having had a notice of twenty-four hours from the Department of Buildings, then the Commissioner of Buildings may enter upon the premises and employ such labor, and furnish such materials, and take such steps as, in his judgment, may be necessary, at the expense of the person or persons whose duty it is to keep the same safe and secure, to make the same safe and secure, or to prevent the same from becoming unsafe or dangerous.

Commissioner of Buildings may act.

To recover expense.

Any party doing the said work, or any part thereof, under and by direction of the said Department of Buildings, may bring and maintain an action against the person or persons last herein referred to, to recover the value of the work done and materials furnished, in and about the said premises, in the same manner as if he had been employed to do the said work by the said person or persons.

Retaining Walls.

By whom built.

When an excavation is made on any lot, the person or persons causing such excavation to be made shall build on the adjoining lot at his or their own cost and expense, a retaining wall to support the adjoining earth, if accorded the necessary license to enter upon the

said adjoining lot, and not otherwise, and such retaining wall shall be carried to the height of the adjoining earth, and be properly protected by coping. If the necessary license is not accorded to the person or persons making such excavation, then it shall be the duty of the owner or owners refusing to grant such license to build the retaining wall on his or their own property at his or their own expense without recourse to the person or persons making the excavation on the premises adjoining thereto.

Duty of adjoining owner.

Thickness proportioned to height.

The thickness of a retaining wall at its base shall be in no case less than one-fourth of its height.

SECTION 23.

Bearing Capacity of Soil.

Where no tests are made.

Where no test of the sustaining power of the soil is made, different soils, excluding mud, at the bottom of the footings, shall be deemed to safely sustain the following loads to the superficial foot, namely:

Soft clay.

Soft clay, one ton per square foot;

Clay and sand.

Ordinary clay and sand together, in layers, wet and springy, two tons per square foot;

Loam, clay or fine sand.

Loam, clay or fine sand, firm and dry, three tons per square foot;

Coarse sand, stiff gravel or hard clay.

Very firm, coarse sand, stiff gravel or hard clay, four tons per square foot, or as otherwise determined by the Commissioner of Buildings.

When a test is made.

Where a test is made of the sustaining power of the soil the Commissioner of Buildings shall be notified so that he may be present, either in person or by representative. The record of the test shall be filed in the Department of Buildings.

Borings.

When a doubt arises as to the safe sustaining power

of the earth upon which a building is to be erected the Department of Buildings may order borings to be made, or direct to be tested the sustaining power of the soil by and at the expense of the owner of the proposed building.

SECTION 24.

Pressure Under Footings of Foundations.

The loads exerting pressure under the footings of foundations in buildings more than three stories in height are to be computed as follows:

Warehouses and factories.

For warehouses and factories they are to be the full dead load and the full live load established by Section 129 of this Code.

Stores and light manufacturing buildings.

In stores and buildings for light manufacturing purposes they are to be the full dead load and seventy-five per cent. of the live load established by Section 129 of this Code.

Churches, schoolhouses and places of public assembly.

In churches, schoolhouses and places of public amusement or assembly, they are to be the full dead load and seventy-five per cent. of the live load established by Section 129 of this Code.

Office buildings, hotels, dwellings, apartments, tenements, lodging houses and stables.

In office buildings, hotels, apartment hotels, dwellings, apartment houses, tenement houses, lodging houses and stables they are to be the full dead load and sixty per cent. of the live load established by Section 129 of this Code.

Uniform pressure.

Footings shall be so designed that the loads will be as nearly uniform as possible, and not in excess of the safe bearing capacity of the soil, as established by Section 23 of this Code.

SECTION 25.

Foundations.

Depth required.

Every building except buildings erected upon solid rock or buildings erected upon wharves and piers on the water front, shall have foundations of brick, stone, iron, steel or concrete laid not less than four feet below the surface of the earth, on the solid ground or level surface of rock, or upon piles or ranging timbers when solid earth or rock is not found.

Piles.

Number and spacing.

Piles of wood intended to sustain a wall, pier or post, shall be spaced not more than thirty-six inches nor less than twenty inches on centers, and they shall be driven to a solid bearing if practicable to do so, and the number of such piles shall be sufficient to support the superstructure proposed.

Size of piles.

No wood pile shall be used of less dimensions than five inches at the small end and ten inches at the butt for short piles, or piles twenty feet or less in length, and twelve inches at the butt for long piles, or piles more than twenty feet in length.

Maximum load.

No wood pile shall be weighted with a load exceeding forty thousand pounds.

When a wood pile is not driven to refusal, its safe sustaining power in tons shall be determined by the following formula:

Formula for strength of pile not driven to refusal.

Twice the weight of the hammer in tons multiplied by the height of the fall in feet divided by least penetration of pile under the last blow in inches plus one.

Notification of test piles.

The Commissioner of Buildings shall be notified of the time when such test piles of wood will be driven, that he may be present, either in person or by representative.

The tops of all piles shall be cut off below the lowest water line. Line for top of piles.

When required, concrete shall be rammed down in the interspaces between the heads of the piles to a depth and thickness of not less than twelve inches, and for one foot in width outside of the piles. Concrete between tops of piles.

Concrete Piles.

Piles of concrete or reinforced concrete piles may be made of concrete, either reinforced or plain. Plain or reinforced.

Plain concrete piles must be molded in place by methods which are reasonably certain to secure perfect, full-sized piles; reinforced concrete piles, if properly designed to resist the shock of driving, and if driven with a cushion to lessen the shock, or if put down by a water jet, may be molded, allowed to harden, and then driven or jetted into place. Molded in place.

In case concrete piles are used, whether reinforced or otherwise, their bearing power shall be determined by putting in one or more test piles and loading them, after the concrete is sufficiently hard. Strength, determining the.

The full working load in the structure shall not be more than one-half of the load under which the pile begins to settle. Working load.

In no case, however, shall the load on a concrete pile exceed twenty-five tons per square foot of cross-section of concrete, plus 6,000 pounds per square inch of any longitudinal steel reinforcement. Concrete piles shall always be made of mixture not leaner than one part cement, two parts sand and five parts gravel or broken stone. The gravel or stone must all be capable of passing a one-inch ring, and the concrete must be mixed by machinery, a batch at a time, and the concrete must be turned over completely at least twenty-five times. One complete revolution of Maximum load. Mixture for concrete. Mixing.

the machine, if not too rapid, will count as one turning of the concrete.

Ranging and Capping Timbers.

Size and kind, and where laid.

Where ranging and capping timbers are laid on piles for foundations, they shall be of hard wood not less than six inches thick and properly joined together, and their tops laid below the lowest water line.

Metal in Foundations.

To be protected from rust.

Where metal is incorporated in or forms part of a foundation it shall be thoroughly protected from rust by paint or asphaltum, and be thoroughly imbedded in concrete, or by such materials and in such manner as may be approved by the Commissioner of Buildings.

Footings for Columns.

To be protected from rust.

When footings of iron or steel for columns are placed below the water level, they shall be similarly coated, and inclosed in concrete, for preservation against rust.

Loads on Foundations.

Piers or caisson work.

When foundations are carried down through earth by piers of stone, brick or concrete in caissons, the loads on same shall be not more than—

When carried down to rock.

Fifteen tons to the square foot when carried down to rock;

Down to gravel or hard clay.

Ten tons to the square foot when carried down to firm gravel or hard clay;

Open caissons or sheathe-pile trenches.

Eight tons to the square foot in open caissons or sheathe-pile trenches when carried down to rock.

Piles Under Frame Buildings Over Water.

May project above water.

Wood piles may be used for the foundations under frame buildings built over the water or on salt meadow

or similar land, in which case the piles may project above the water a sufficient height to raise the building above high tide, and the building may be placed directly thereon without other foundation.

SECTION 26.

Foundation Walls.

Meaning of term.

Foundation walls shall be construed to include all walls and piers built below the curb level, or nearest tier of beams to the curb, or to the average level of the ground adjoining the walls, to serve as supports for walls, piers, columns, girders, posts or beams.

Materials.

Foundation walls shall be built of stone, brick, Portland cement concrete, iron or steel.

Thickness when of stone.

If built of rubble stone, or Portland cement concrete, they shall be at least eight inches thicker than the wall next above them to a depth of twelve feet below the curb level; and for every additional ten feet, or part thereof, deeper, they shall be increased four inches in thickness.

Thickness when of brick.

If built of brick, they shall be at least four inches thicker than the wall next above them to a depth of twelve feet below the curb level; and for every additional ten feet, or part thereof, deeper, they shall be increased four inches in thickness.

Base Course.

Materials.

The footing or base course shall be of stone or concrete, or both, or of concrete and stepped-up brickwork, of sufficient thickness and area to safely bear the weight to be imposed thereon.

If of concrete. If the footing or base course be of concrete, the concrete shall be not less than twelve inches thick.

If of stone. If of stone, the stones shall not be less than two by three feet, and at least eight inches in thickness for walls; and not less than ten inches in thickness if under piers, columns or posts.

Projection of footing or base course. The footing or base course, whether formed of concrete or stone, shall be at least twelve inches wider than the bottom width of walls, and at least twelve inches wider on all sides than the bottom width of said piers, columns or posts.

When thickness is to be increased. If the superimposed load is such as to cause undue transverse strain on a footing projecting twelve inches, the thickness of such footing is to be increased so as to carry the load with safety.

Reduction in thickness and projection for small structures. For small structures, and for small piers sustaining light loads, the Commissioner of Buildings may, in his discretion, allow a reduction in the thickness and projection for footings or base courses herein specified.

All base stones shall be well bedded and laid crosswise, edge to edge.

Stepped-Up Footings.

Off-sets in brick. If stepped-up footings of brick are used in place of stone, above the concrete, the off-sets, if laid in single courses, shall each not exceed one and one-half inches, or if laid in double courses, then each shall not exceed three inches, offsetting the first course of brickwork, back one-half the thickness of the concrete base, so as to properly distribute the load to be imposed thereon.

Inverted Arches.

Between isolated piers. If, in place of a continuous foundation wall, isolated piers are to be built to support the superstructure, where

the nature of the ground and the character of the building, in the opinion of the Commissioner of Buildings, make it necessary, inverted arches resting on a proper bed of concrete, both designed to transmit with safety the superimposed loads, shall be turned between the piers. The thrust of the outer piers shall be taken up by suitable wrought iron or steel rods and plates.

Grillage in Foundations.

Construction.

Grillage beams of wrought iron or steel resting on a proper concrete bed may be used. Such beams shall be provided with separators and bolts inclosed and filled solid between with concrete, and of such sizes and so arranged as to transmit with safety the superimposed loads.

Headers in Stone Walls.

Requirement as to number.

All stone walls twenty-four inches or less in thickness shall have at least one header extending through the wall in every three feet in height from the bottom of the wall, and in every three feet in length, and if over twenty-four inches in thickness, shall have one header for every six superficial feet on both sides of the wall, laid on top of each other to bond together, and running into the wall at least two feet.

Size of headers.

All headers shall be at least twelve inches in width and eight inches in thickness and consist of good flat stones.

How stones shall be laid.

No stone shall be laid in such walls in any other position than on its natural bed.

Stones must bond.

No stone shall be used that does not bond or extend into the wall at least six inches.

Beds and joints filled.

Stones shall be firmly bedded in cement mortar and all spaces and joints thoroughly filled.

PART VI.

WALLS, PIERS AND PARTITIONS.

SECTION 27.

Materials of Walls.

Walls, what constructed of.

The walls of all buildings, other than frame or wood buildings, shall be constructed of stone, brick, Portland cement concrete, iron or steel or, if approved by the Commissioner of Buildings, other hard, incombustible material, and the several component parts of such buildings shall be as herein provided.

Front, rear and side walls.

All buildings shall be inclosed on all sides with independent or party walls.

SECTION 28.

Walls and Piers.

When piers or buttresses are used.

In all walls of the thickness specified in this Code, the same amount of materials may be used in piers or buttresses.

Bearing Walls Defined.

Bearing walls shall be taken to mean those walls on which the beams, girders or trusses rest.

Bearing Walls with Openings.

When to be increased in thickness.

If any horizontal section through any part of any bearing wall in any building shows more than thirty per centum area of flues and openings, the said wall shall be increased four inches in thickness for every fif-

teen per centum, or fraction thereof, of flue or opening area in excess of thirty per centum.

Brick and Masonry Work.

How built.

The walls and piers of all buildings shall be properly and solidly bonded together with close joints filled with mortar. They shall be built to a line and be carried up plumb and straight.

Off-sets in walls to be at top line of beams.

The walls of each story shall be built up the full thickness to the top of the beams above.

Brick to be wet.

All brick laid in non-freezing weather shall be well wet before being laid.

Frozen walls.

Walls or piers, or parts of walls and piers, shall not be built in freezing weather, and if frozen, shall not be built upon.

Piers.

Materials.

All piers shall be built of good, hard, well-burnt brick laid in cement mortar, excepting that piers fronting on a street may be built of stone.

Cast-iron bond plates in brick piers.

Every pier built of brick, containing less than nine superficial feet at the base, supporting any beam, girder, arch or column on which a wall rests, or lintel spanning an opening over ten feet and supporting a wall, shall at intervals of not over thirty inches apart in height have built into it a cast-iron or steel bond plate of sufficient strength, and the full size of the piers.

Front pier bond stones.

For piers fronting on a street bond stones to conform with the kind of stone used for the trimmings of the front may be used above the sidewalk.

Cap stones.

Cap stones corresponding to the trimmings of the front, proportioned to the weight to be carried, but not less than five inches in thickness, by the full size

of the pier, may be used above the sidewalk for piers fronting on a street. For the capping of all other piers cast-iron plates of equal strength by the full size of the pier shall be set under all columns or girders.

Or cast-iron plates.

Isolated brick piers, breadth proportioned to height.

Isolated brick piers shall not exceed in height ten times their least dimensions.

Stone Posts Under Interior Columns.

Prohibited.

Stone posts for the support of posts or columns above shall not be used in the interior of any building.

Piers and Walls of Coursed Stone.

May be of reduced thickness.

Where walls or outside piers are built of coursed stones, with dressed level beds and vertical joints, the Commissioner of Buildings shall have the right to allow such walls or piers to be built of a less thickness than specified for brickwork, but in no case shall said walls or piers be less than three-quarters of the thickness provided for brickwork.

Heading Courses in Brick Walls.

Every sixth course.

In all brick walls every sixth course shall be a heading course, except where walls are faced with brick in running bond, in which latter case, every sixth course shall be bonded into the backing by cutting the course of the face brick and putting in diagonal headers behind the same, or by splitting the face brick in half and backing the same with a continuous row of headers.

Face brick to be bonded into the backing.

Roman size face brick.

Where face brick is used of a different thickness from the brick used for the backing, the courses of the exterior and interior brickwork shall be brought to a level

bed at intervals of not more than ten courses in height of the face brick, and the face brick shall be properly tied to the backing by a heading course of the face brick.

Thickness for walls with face brick laid in running bond.

All bearing walls faced with brick laid in running bond shall be four inches thicker than the walls are required to be under any section of this Code.

Walls laid in Flemish bond.

If brick walls are laid in Flemish bond, all headers must be full headers, if possible. Where this is not possible, the headers of every sixth course must be full headers, and in this case, the thickness of the wall must be four inches greater than it would otherwise be, under the requirements of this law.

Ashlar.

Minimum thickness.

Stone used for the facing of any building, and known as ashlar, shall be not less than four inches thick.

Ashlar to be anchored.

Stone ashlar shall be anchored to the backing and the backing shall be of such thickness as to make the walls, independent of the ashlar, conform as to the thickness with the requirements of Sections 31 and 32 of this Code,

When ashlar may be counted in thickness of walls.

Unless the ashlar be at least eight inches thick and bonded into the backing, and then it may be counted as part of the thickness of the wall.

Iron ashlar.

Iron ashlar plates used in imitation of stone ashlar on the face of a wall shall be backed up with the same thickness of brickwork as required for a brick wall without ashlar.

SECTION 29.

Mortar for Walls and Ashlar.

When cement mortar required.

All foundation walls, isolated piers, parapet walls and chimneys above roofs shall be laid in cement mortar,

Use of small portion of lime allowed in cement mortar.

But this shall not prohibit the use in cold weather of a small proportion of lime to prevent the mortar from freezing.

Mortar for walls.

All other walls built of brick or stone shall be laid in lime, cement, or lime and cement mortar mixed.

Mortar for backing of stone ashlar.

The backing up of all stone ashlar shall be laid up with cement mortar, or cement and lime mortar mixed, but the back of the ashlar may be parged with lime mortar or coated with asphaltum varnish to prevent discoloration of the stone.

SECTION 30.

Limiting the Height of Buildings.

Non-fireproof buildings.

No non-fireproof building or structure hereafter erected shall exceed fifty-five feet in height, nor the heights specified for non-fireproof buildings of the several respective classes mentioned in Section 106 of this Code.

Height proportioned to width of street.

No building, or structure hereafter erected, except a church spire, shall exceed in height two and one-half times the width of the widest street upon which it stands, but in no case shall any building exceed one hundred and twenty-five feet, or if to be used above the ground floor as warehouses or stores for the storage or sale of merchandise shall it exceed one hundred feet in height.

Warehouse buildings.

Measurement for height.

Such height shall be the perpendicular distance measured in a straight line, taken at the centre of the facade

of the building, from the curb level to the highest point of the roof beams, not including in such measurement of height cornices which do not extend more than five feet above the highest point of the roof beams nor inclosures for the machinery of elevators which do not exceed fifteen feet in height, or inclosures for tanks which do not exceed twenty feet in height above the roof beams and do not exceed in united area ten per centum of the area of the roof.

Cornices.

Tank and elevator inclosures.

SECTION 31.

Walls for Dwelling House Class.

The expression "walls for dwelling house class" shall be taken to mean and include walls for the following buildings:

Apartment Houses,
Apartment Hotels,
Asylums,
Club Houses,
Convents,
Dormitories,
Dwellings,
Hospitals,
Hotels,
Laboratories,
Lodging Houses,
Parish Buildings,
Schools,
Studios,
Tenements.

For buildings hereafter erected in the dwelling house class, the minimum thickness of all independent surrounding and dividing walls in the same, carrying the loads of floors and roofs, shall be made in accordance with the following table:

HEIGHT	DWELLING-HOUSE CLASS—BRICK WALLS (MINIMUM THICKNESSES IN INCHES)											
	BASEMENT		STORIES									
	Stone	Brick	1	2	3	4	5	6	7	8	9	10
One Story	16	12	12									
Two Stories	20	12	12	12								
Three Stories	20	12	12	12	12							
Four Stories	20	16	12	12	12	12						
Five Stories	20	16	12	12	12	12	12					
Six Stories	24	20	16	12	12	12	12	12				
Seven Stories	24	20	16	16	12	12	12	12	12			
Eight Stories	28	24	20	16	16	16	16	12	12	12		
Nine Stories	28	24	20	20	16	16	16	16	12	12	12	
Ten Stories	32	28	24	20	20	20	16	16	16	16	12	12

When the above walls are used for *party walls* in non-fireproof buildings, the ends of the beams shall rest on corbeled ledges, or when entering the twelve-inch sections of the walls shall be staggered. If the beams do not rest on corbeled ledges, or are not so staggered, the twelve-inch sections of the walls shall be increased to not less than sixteen inches in thickness.

When used for bearing party walls in fireproof buildings, no portion of the walls shall be less than sixteen inches in thickness.

When thickness of walls to be increased.

If any story exceeds the height stated in Section 35 of this Code, the thickness of walls shall be increased as stated in said Section.

NOTE—The above table for thicknesses of walls is based upon a minimum size of brick of about 7⅞ x 3½ x 2¼ inches. Sizes of bricks are variable in different sections of the United States.

Brick Partition Walls in Dwellings Exceeding 26 Feet in Width.

Non-fireproof dwelling houses.

All non-fireproof dwelling houses erected under this section, exceeding twenty-six feet in width, shall have brick fore and aft partition walls.

Partition Walls.

When not over 33 feet between bearing walls.

Eight-inch brick partition walls may be built to support the beams in such buildings when the distance between the main or bearing walls is not over thirty-three feet;

When over 33 feet between bearing walls.

If the distance between the main or bearing walls is over thirty-three feet the brick partition wall shall be not less than twelve inches thick;

Proviso.

Provided, that no clear span is over twenty-six feet.

Limiting the Height for a Single Thickness of Wall.

No section of a wall of the same thickness shall exceed, measuring vertically, the height provided elsewhere in this section and in sections 32 and 35 of this Code.

Iron Columns and Girders Instead of Partition Walls.

In non-fireproof residence buildings.

This section shall not be construed to prevent the use of iron or steel girders, or iron or steel girders and columns when properly insulated as provided in Section 108 of this Code, or piers of masonry, for the support of the walls and ceilings over any room which has a clear span of more than twenty-six feet between walls, in such residence buildings as are not constructed fireproof.

In fireproof residence buildings.

Nor to prohibit the use of iron or steel girders, or iron or steel girders and columns in place of brick walls

in buildings which are to be used for residence purposes when constructed fireproof, and insulated.

Clear Span Thicknesses.

Walls must be thicker when clear span exceeds 26 feet.

If the clear span is to be over twenty-six feet, then the bearing walls shall be increased four inches in thickness for every twelve and one-half feet or part thereof, that said span is over twenty-six feet,

Piers or buttresses instead of increased thickness.

Or shall have instead of the increased thickness, such piers or buttresses as, in the judgment of the Commissioner of Buildings, may be necessary.

SECTION 32.

Walls for Warehouse Class.

The expression "walls for warehouse class" shall be taken to mean and include walls for the following buildings:

Armories,
Barns,
Breweries,
Carriage Houses,
Churches,
Cooperage Shops,
Court Houses,
Factories,
Foundries,
Garages,
Jails,
Libraries,
Light and Power Houses,
Machine Shops,
Markets,
Mills,
Museums,
Observatories,
Office Buildings,
Police Stations,
Printing Houses,
Public Assembly Buildings,
Pumping Stations,
Railroad Buildings,
Refrigerating Houses,
Slaughter Houses,
Stables,
Stores,
Sugar Refineries,
Theatres,
Warehouses,
Wheelwright Shops.

For buildings hereafter erected in the warehouse class, twenty-five feet or less in width between walls or bearings, the minimum thickness of all independent surrounding or dividing walls in the same, carrying the loads of floors and roofs shall be made in accordance with the following table:

HEIGHT	WAREHOUSE CLASS—BRICK WALLS (MINIMUM THICKNESSES IN INCHES)											
	BASEMENT		STORIES									
	Stone	Brick	1	2	3	4	5	6	7	8	9	10
One Story	20	16	12									
Two Stories	20	16	12	12								
Three Stories	20	16	12	12	12							
Four Stories	24	20	16	16	16	12						
Five Stories	28	24	20	16	16	16	12					
Six Stories	32	28	24	20	20	20	16	16				
Seven Stories	32	28	24	24	20	20	20	16	16			
Eight Stories	36	32	24	24	24	20	20	20	16	16		
Nine Stories	36	32	28	24	24	24	20	20	20	16	16	
Ten Stories	36	32	28	28	24	24	24	20	20	20	16	16

When the above walls are used for *party walls* in non-fireproof buildings, the twelve-inch sections of the walls shall have corbeled ledges to carry the ends of the beams, or be increased in thickness to not less than sixteen inches, and the beams entering the walls shall

NOTE—The above table for thicknesses of walls is based upon a minimum size of brick of about $7\frac{7}{8}$ x $3\frac{1}{2}$ x $2\frac{1}{4}$ inches. Sizes of bricks are variable in different sections of the United States.

be staggered. If the beams do not rest on corbeled ledges or are not so staggered, the twelve and sixteen-inch sections of the wall shall be increased to not less than twenty inches.

When used for bearing party walls in fireproof buildings, no portion of the walls shall be less than sixteen inches in thickness.

If any story exceeds the height stated in Section 35 of this Code, the thickness of walls shall be increased as stated in said Section.

Clear Span Thickness.

Walls thickened according to clear span.

If there is to be a clear span of over twenty-five feet between the bearing walls, such walls shall be four inches thicker than in this section specified, for every twelve and one-half feet, or fraction thereof, that said walls are more than twenty-five feet apart, or shall have instead of the increased thickness such piers or buttresses as, in the judgment of the Commissioner of Buildings, may be necessary.

Walls for Public Buildings.

To be supplemented in strength.

The walls of buildings of a public character shall be not less than in this Code specified for warehouses with such piers or such buttresses, or supplemental columns of iron or steel properly insulated as provided in Section 108 as, in the judgment of the Commissioner of Buildings, may be necessary to make a safe and substantial building.

SECTION 33.

Partition Walls or Girders and Columns.

Exceeding a width of 25 fee between walls.

In all stores, warehouses and factories over twenty-five feet in width between walls there shall be brick partition walls, or girders supported on iron, steel, or wood columns, or piers of masonry. When such girders or columns are of iron or steel they shall be properly insulated as provided in Section 108 of this Code.

Floor Areas in Stores, Warehouses, Factories, and Other Buildings.

Non-fireproof buildings.

In all non-fireproof stores, warehouses and factories, no single floor area, between brick fire walls of a thickness corresponding to the main bearing walls, shall exceed the following—

Fronting on one street only, inside lots.

When located fronting on one street only, may cover an area of not more than five thousand square feet;

Extending from street to street.

Or when extending from street to street may cover an area of not more than six thousand square feet;

Fronting on two streets, single corner.

Or if a corner building fronting on two streets, it may cover not more than six thousand square feet;

Fronting on three streets, double corner or tee shape.

Or when such a building fronts on three streets it may cover an area of not more than seven thousand five hundred square feet between brick fire walls.

Fireproof buildings not exceeding 55 feet in height.

In all stores, warehouses and factories, not exceeding fifty-five feet in height, which may be built fireproof, the areas between brick fire walls of a thickness corresponding to the main bearing walls, may be one hundred per centum greater than the areas stated hereinbefore in this section for non-fireproof buildings, that is to say—

Fronting on one street only, inside lot.

When located fronting on one street only it may cover an area of not more than ten thousand square feet;

Extending from street to street.

Or when such a building extends from street to street it may cover an area of not more than twelve thousand square feet;

Fronting on two streets, single corner.

Or if a corner building fronting on two streets it may cover an area of not more than twelve thousand square feet;

Fronting on three streets, double corner or tee shape.

Or when such a building fronts on three streets it may cover an area of not more than fifteen thousand square feet between brick fire walls.

Fireproof buildings exceeding 55 feet in height.

But in case any such fireproof building exceeds the height of fifty-five feet, the areas between brick fire walls of a thickness corresponding to the main bearing walls may be the same, but no greater than the areas hereinbefore stated in this section for non-fireproof construction;

When foregoing buildings have automatic sprinklers.

Provided, however, in case the foregoing described buildings are completely equipped with a system of automatic sprinklers in a manner approved by the .....Board of Fire Underwriters, the areas between the brick partition walls may be increased as follows:

Non-fireproof buildings.

For the non-fireproof constructed buildings, the respective areas hereinbefore stated may be increased fifty per centum;

Fireproof buildings not exceeding 55 feet in height.

For the fireproof constructed buildings not exceeding fifty-five feet in height, the respective areas hereinbefore stated may be increased thirty-three and one-third per centum; and

Fireproof buildings exceeding 55 feet in height.

For the fireproof constructed buildings exceeding fifty-five feet in height, the respective areas hereinbe-

fore stated may be increased thirty-three and one-third per centum.

For fireproof constructed buildings intended or designed for occupancy other than for stores, warehouses and factories, and when not exceeding one hundred and twenty-five feet in height, the areas between brick fire walls of a thickness corresponding to the main bearing walls may be the same, but no greater than the areas hereinbefore stated in this Section for fireproof buildings not exceeding fifty-five feet in height with automatic sprinkler protection, that is to say— Fireproof buildings other than stores, warehouses and factories, not exceeding 125 feet in height.

When located fronting on one street only, may cover an area of not more than thirteen thousand three hundred and thirty-three square feet; Fronting on one street only, inside lot.

Or when such a building extends from street to street the area may be not more than sixteen thousand square feet; Extending from street to street.

Or if a corner building fronting on two streets, it may cover an area of not more than sixteen thousand square feet; Fronting on two streets, single corner.

Or when such a building fronts on three streets it may cover an area between said brick fire walls of not more than twenty thousand square feet; Fronting on three streets, double corner or tee shape.

Provided, however, in case such buildings are completely equipped with a system of automatic sprinklers as hereinbefore described, the respective areas between the brick fire walls may be increased fifty per centum. Last described buildings, when equipped with automatic sprinklers.

The automatic sprinkler system, including the water supply in connection therewith, hereby required in this Section shall be installed and kept in perfect working order by the owner, lessee or occupant of the premises. Automatic sprinkler system to be kept in working order.

RE-CAPITULATION OF LIMIT OF FLOOR AREAS.

In tabulated form, a recapitulation of the extreme limit of areas in each case between brick fire walls, as specified in this Section, is as follows: Recapitulation.

Non-Fireproof Construction.

Any occupancy, height limited to 55 feet

Area, without Automatic Sprinkler Protection.

Fronting on one street only	5,000 sq. ft.
Fronting on two streets, that is, extending through from street to street	6,000 sq ft.
Corner building, fronting on two streets	6,000 sq. ft.
Fronting on three streets.	7,500 sq. ft.

Non-Fireproof Construction.

Any occupancy, height limited to 55 feet

Area, with Automatic Sprinkler Protection (being an increase of 50 per cent. over the unsprinklered area).

One street front	7,500 sq. ft.
Two street fronts	9,000 sq. ft.
Corner building, two street fronts	9,000 sq. ft.
Three street fronts	11,250 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height when not exceeding 55 feet.

Area, without Automatic Sprinkler Protection.

Fronting on one street only	10,000 sq. ft.
Fronting on two streets, that is, extending through from street to street	12,000 sq. ft.
Corner building, fronting on two streets	12,000 sq. ft.
Fronting on three streets.	15,000 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height when not exceeding 55 feet.

Area, with Automatic Sprinkler Protection (being an increase of 33 1-3 per cent. over the unsprinklered area).

One street front	13,333 sq. ft.
Two street fronts	16,000 sq. ft.
Corner building, two street fronts	16,000 sq. ft.
Three street fronts	20,000 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height limited to 100 feet.

Area, without Automatic Sprinkler Protection, same as for non-fireproof construction.

Fronting on one street only	5,000 sq. ft.
Fronting on two streets, that is, extending through from street to street	6,000 sq. ft.
Corner building, fronting on two streets	6,000 sq. ft.
Fronting on three streets.	7,500 sq. ft.

Fireproof Construction.

Occupancy, stores, warehouses and factories. Height limited to 100 feet.

Area, with Automatic Sprinkler Protection (being an increase of 33 1-3 per cent. over the unsprinklered area).

One street front	6,666 sq. ft.
Two street fronts	8,000 sq. ft.
Corner building, two street fronts	8,000 sq. ft.
Three street fronts	10,000 sq. ft.

Fireproof Construction.

Occupancy, other than stores, warehouses and factories. Height limited to 125 feet.

Area, without Automatic Sprinkler Protection, same as for fireproof construction limited to 55 feet and with Automatic Sprinkler protection.

Fronting on one street only	13,333 sq. ft.
Fronting on two streets, that is, extending through from street to street	16,000 sq. ft.
Corner building, fronting on two streets	16,000 sq. ft.
Fronting on three streets.	20,000 sq. ft.

Fireproof Construction.

Occupancy, other than stores, warehouses and factories. Height limited to 125 feet.

Area, with Automatic Sprinkler Protection (being an increase of 50 per cent. over the unsprinklered area).

One street front	20,000 sq. ft.
Two street fronts	24,000 sq. ft.
Corner building, two street fronts	24,000 sq. ft.
Three street fronts	30,000 sq. ft.

No wall or part of wall in any existing building nor in any building hereafter erected shall be removed to produce a larger area than those named in this Section. Prohibiting removal of walls.

When more than two fireproof or non-fireproof buildings communicate, although protected by double standard fireproof doors, they shall be provided with a system of approved automatic sprinklers where occupied as stores, warehouses, and factories. Communicating areas to have automatic sprinkler systems.

Openings in the brick fire walls of buildings specified in this Section shall in no case exceed eight feet in width, nor more than ten feet in height, and above each such opening there shall be a curtain wall between the top of the opening and the ceiling line of at least three feet. The openings shall be provided with approved automatic self-closing standard fireproof doors on both sides of the wall. Openings in fire walls, maximum size for. Doors, automatic self-closing.

SECTION 34.

Increased Thicknesses of Walls for Buildings More Than One Hundred and Five Feet in Depth.

All buildings, not excepting dwellings, that are over one hundred and five feet in depth, without a crosswall or proper piers or buttresses, shall have the side or bearing walls increased in thickness four inches more than is specified in the respective sections of this Code for the thickness of walls for every one hundred and five feet, or part thereof, that the said buildings are over one hundred and five feet in depth. When there are no cross-walls or piers

Reduced Thickness for Interior Walls.

In case the walls of any building are less than twenty-five feet apart, and less than forty feet in depth, or there are crosswalls which intersect the walls, not more When interior walls may be reduced in thickness.

than forty feet distant, or piers or buttresses built into the walls, the interior walls may be reduced in thickness in just proportion to the number of crosswalls, piers or buttresses, and their nearness to each other; provided, however, that this clause shall not apply to walls below fifty-five feet in height, and that no such wall shall be less than twelve inches thick at the top, and gradually increased in thickness by set-offs to the bottom.

Proviso.

Reduced thickness permitted.

The Commissioner of Buildings is hereby authorized and empowered to decide (except where herein otherwise provided for) how much the walls herein mentioned may be permitted to be reduced in thickness without endangering the strength and safety of the building, according to the peculiar circumstances of each case.

SECTION 35.

Height of Stories.

The height of stories for all given thicknesses of walls shall not exceed—

First story	16	feet in the clear
Second story	14	feet in the clear
Third story	12	feet in the clear
Fourth and upper stories	11	feet in the clear

If increased in height.

And if any story exceeds the foregoing heights, the walls of any such story and all walls below that story shall be increased four inches in thickness.

Defining height of story.

The height of a story shall be the perpendicular distance from the top of the finished floor in one story to the underside of the finished ceiling in the same story.

Meaning of Stories.

The first story shall be taken to mean the story the floor of which is first above the basement. First story.

The upper stories shall be taken to mean the stories the floors of which are above the first story and numbered in regular succession, counting upwards. Upper stories.

Meaning of Basement and Cellar.

A basement shall be taken to mean that portion of a building the floor of which is below the curb level at the centre of the front of the building, more than one foot, and not more than three-fourths of the height of said portion measuring from floor to ceiling. Basement.

A cellar shall be taken to mean the lowest portion of a building the floor of which is below the curb level at the centre of the front of the building, more than three-fourths of the height of said portion measuring from the floor to the ceiling. Cellar.

SECTION 36.

Inclosure Walls for Skeleton Structures.

Walls of brick built in between iron or steel columns, and supported wholly or in part on iron or steel girders—

Shall be not less than twelve inches thick for sixty-five feet of the uppermost height thereof, or to the nearest tier of beams to that measurement, in any building so constructed. Thickness for uppermost portion.

And the lower section of sixty feet or to the nearest tier of beams to such vertical measurement, or part thereof, shall have a thickness of four inches more than Thickness for lower portion.

is required for the section next above it down to the tier of beams nearest to the curb level;

Thickness below curb level.

And thence downward, the thickness of walls shall increase in the ratio prescribed in Section 26, this Code.

Reduced Thickness for Adjoining Walls.

Thickness stated.

When two independent buildings of skeleton type of construction, and of the same height adjoin each other, the thickness of the said independent walls above the foundations for such sections where they adjoin may be not less than eight inches.

SECTION 37.

Curtain Walls.

Interior of building.

Curtain walls shall be taken to mean walls built in the interior of a building between piers or iron or steel columns, and being non-bearing walls—

Thickness for uppermost portion.

Shall be not less than twelve inches thick for sixty-five feet of the uppermost height thereof or nearest tier of beams to that height,

Thickness for lower portion.

And increased four inches for the lower section of sixty feet or nearest tier of beams to that height;

Thickness below curb level.

And thence downward the thickness of walls shall increase in the ratio prescribed in Section 26 of this Code.

SECTION 38.

Existing Party Walls.

Walls built for party walls may be so used.

Walls heretofore built for or used as party walls, whose thickness at the time of their erection was in accordance with the requirements of the then existing laws, but which are not in accordance with the requirements of this Code, may be used, if in good condition, for the ordinary uses of party walls, provided the height of the same be not increased.

SECTION 39.

Lining Existing Walls.

Lining of independent or party walls.

In case it is desired to increase the height of existing party or independent walls, which are less in thickness than required under this Code, the same shall be done by a lining of brickwork to form a combined thickness with the old wall of not less than four inches more than the thickness required for a new wall corresponding with the total height of the wall when so increased in height.

Foundations for linings.

The said linings shall be supported on proper foundations,

Height for lining.

And carried up to such height as the Commissioner of Buildings may require.

Thickness for and method of lining.

No lining shall be less than eight inches in thickness, and all lining shall be laid up in cement mortar and thoroughly anchored to the old brick walls with suitable

Anchors.

wrought-iron anchors, placed two feet apart and properly fastened or driven into the old walls in rows alternating vertically and horizontally with each other, the old walls being first cleaned of plaster or other coatings where any lining is to be built against the same.

Rubble walls to be inspected before being lined.

No rubble stone wall shall be lined except after inspection and approval by the Department.

SECTION 40.

Walls of Unfinished Buildings.

Commenced under previous laws, may be completed.

Any building, the erection of which was commenced in accordance with specifications and plans submitted to and approved by the Department of Buildings prior to the passage of this Code, if properly constructed, and in

safe condition, may be completed, or built upon in accordance with the requirements of law, as to thickness of walls, in force at the time when such specifications and plans were approved.

SECTION 41.

Walls Tied, Anchored and Braced.

Forbidding side walls being carried up in advance of front or rear walls.

In no case shall any wall or walls of any building be carried up more than two stories in advance of any other wall, except by permission of the Commissioner of Buildings,

Including skeleton structures in prohibition.

And this prohibition shall include the inclosure walls for skeleton buildings.

Walls bonded and anchored.

The front, rear, side and party walls shall be properly bonded together, or anchored to each other every six feet in their height by wrought-iron tie anchors, not

Anchors, size of.

less than one and a half inches by three-eighths of an inch in size, and not less than twenty-four inches in length.

Side anchors, distance apart.

The side anchors shall be built into the side or party walls not less than sixteen inches, and into the front and rear walls, so as to secure the front and rear walls to the side, or party walls, when not built and bonded together.

Exterior piers to be anchored.

All exterior piers shall be anchored to the beams or girders on the level of each tier.

Walls to be Braced.

Placing of braces for walls.

The walls and beams of every building, during the erection or alteration thereof, shall be strongly braced from the beams of each story, and when required, shall also be braced from the outside, until the building is inclosed.

The roof tier of wood beams shall be safely anchored, with plank or joist, to the beams of the story below until the building is inclosed. Roof beams to be anchored.

SECTION 42.

Arches and Lintels.

Openings for doors and windows in all buildings shall have good and sufficient arches of stone, brick, or terra-cotta, well built and keyed with good and sufficient abutments, or lintels of stone, iron or steel of sufficient strength, which shall have a bearing at each end of not less than five inches on the wall. Over door and window openings.

Inside Lintels.

On the inside of all openings in which lintels shall be less than the thickness of the wall to be supported, there shall be timber lintels, which shall rest at each end not more than three inches on any wall, which shall be chamfered at each end, and shall have a suitable arch turned over the timber lintel. Timber lintels. Arch turned over timber lintel.

Or the inside lintel may be of cast iron, or wrought iron or steel, and in such case stone blocks or cast iron plates shall not be required at the ends where the lintel rests on the walls, provided the opening is not more than six feet in width. Iron or steel inside lintels.

Masonry Arches.

All masonry arches shall be capable of sustaining the weight and pressure which they are designed to carry, and the stress at any point shall not exceed the working Strength of.

stress for the material used, as given in Section 138 of this Code.

Tie rods. Tie rods shall be used where necessary to secure stability in accordance with current good practice.

SECTION 43.

Parapet Walls.

All exterior and division or party walls over fifteen feet high, excepting where such walls are to be finished with cornices, gutters or crown moldings, shall have

Thickness and height. parapet walls not less than eight inches in thickness and carried two feet above the roof.

On commercial and manufacturing buildings. But for warehouses, factories, stores and other buildings used for commercial or manufacturing purposes the parapet walls shall be not less than twelve inches in thickness and carried three feet above the roof,

To be coped. And all such walls shall be coped with stone, terra cotta or cast iron.

SECTION 44.

Hollow Walls.

Quantity of material in. In all walls that are built hollow the same quantity of stone, brick or concrete shall be used in their construction as if they were built solid, as in this Code provided,

The parts to be tied together. And no hollow wall shall be built unless the parts of same are connected by proper ties, either of brick, stone or iron, placed not over twenty-four inches apart.

SECTION 45.

Hollow Bricks on Inside of Walls.

Walls may have inside face of hollow brick.

The inside four inches of any wall may be built of hard-burnt hollow brick, properly tied and bonded by means of full header courses every sixth course into the walls, and of the dimension of the ordinary bricks.

Hollow clay blocks not to be counted in thickness of wall.

Where hollow tile or porous terra cotta blocks are used as lining or furring for walls, they shall not be included in the measurement of the thickness of such walls.

SECTION 46.

Recesses and Chases in Walls.

In walls of the lower stories.

Recesses for stairways or elevators may be left in the foundation or cellar walls of all buildings, but in no case shall the walls be of less thickness than the walls of the fourth story, unless reinforced by additional piers with iron or steel girders, or iron or steel columns and girders, properly insulated, and securely anchored to walls on each side.

Recesses for Alcoves.

Limiting depth and width for alcove recesses.

Recesses for alcoves and similar purposes shall have not less than eight inches of brickwork at the back of such recesses, and such recesses shall be not more than eight feet in width, and shall be arched over or spanned with iron or steel lintels, and not carried up higher than eighteen inches below the bottom of the beams of the floor next above.

Chases for Pipes.

Proportion of depth to thickness.

No chase for water or other pipes shall be made in any pier, and in no wall more than one-third of its thickness.

Filling-in required at each floor.

The chases around said pipe or pipes shall be filled up with solid masonry for the space of one foot at the top and bottom of each story.

Horizontal chases in walls.

No horizontal recess or chase in any wall shall be made exceeding four feet in length without permission of the Commissioner of Buildings.

Aggregate Area for Recesses and Chases.

Limiting the aggregate area.

The aggregate area of recesses and chases in any wall shall not exceed one-fourth of the whole area of the face of the wall on any story, nor shall any such recess be made within a distance of six feet from any other recess in the same wall.

SECTION 47.

Furred Walls.

Brickwork between ends of wood beams to project.

In all walls furred with wood the brickwork between the ends of wood beams shall project the thickness of the furring beyond the inner face of the wall for the full depth of the beams.

SECTION 48.

Light and Vent Shafts.

Walls of brick.

In every building hereafter erected or altered, all the walls or partitions forming interior light or vent shafts, shall be built of brick, except that when the area of any such shafts does not exceed twenty-five square feet the inclosing walls or partitions may be of such other fireproof materials as may be approved by the Commissioner of Buildings.

Other fireproof materials.

The walls of all light or vent shafts, whether exterior or interior, hereafter erected, shall be carried up not less than three feet above the level of the roof, To extend above roof.

And the brick walls shall be coped as other parapet walls. Walls to be coped.

When the shaft is covered by a ventilating skylight of metal and glass the walls need not be carried more than two feet above the roof. When shaft is covered.

When metal louvres are used for ventilating purposes, the louvres or slats shall be riveted to the metal frame. Metal louvres.

One-Story Vent Shafts in Private Dwellings.

Vent shafts not more than twenty square feet in area to light interior bath rooms in private dwellings may be built of wood studs filled in solidly with brick or hard-burnt clay blocks, or of wood covered on all sides with metal, metal lath and plaster or plaster boards, when extending through not more than one story, and carried not less than two feet above the roof, and covered with a ventilating skylight of metal and glass. Stud partitions filled in.

SECTION 49.

Brick and Hollow Tile Partitions.

Eight-inch brick, and six-inch hollow tile, and four-inch brick or four-inch hollow tile partitions, of hard-burnt clay or porous terra-cotta laid up with cement mortar, may be built, not exceeding in their vertical portions a measurement of fifty for the eight-inch, thirty-six for the six-inch and twenty-four feet for the four-inch, respectively, and in their horizontal measurement a Limiting height and length.

length not exceeding seventy-five feet, unless said partition walls are strengthened by proper crosswalls, piers or buttresses, or built in iron or steel framework when the latter is imbedded in or insulated by the same material of which the partition is constructed.

To be properly supported.

All such partitions shall be carried on proper foundations, or on iron or steel girders, or on iron or steel girders and columns, properly insulated, or piers of masonry.

SECTION 50.

Cellar Partitions in Residence Buildings.

Brick partition wall in cellar under stud partition.

One line of fore and aft partitions in the cellar or lowest story, supporting stud partitions above, in all residence buildings over twenty feet between bearing walls in the cellar or lowest story, hereafter erected, shall be constructed of brick, not less than eight inches thick,

Arched openings.

Or piers of brick with openings arched over below the underside of the first tier of beams,

Girders and columns or piers.

Or girders of iron or steel and iron columns, or piers of masonry may be used;

Iron or steel floor beams to support stud partitions.

Or if iron or steel floor beams spanning the distance between bearing walls are used of adequate strength to support the stud partitions above in addition to the floor load to be sustained by the said iron or steel beams, then the fore and aft brick partition, or its equivalent, may be omitted.

Foundations for stud partitions in lowest story.

Stud partitions which may be placed in the cellar or lowest story of any building, shall have good solid stone, brick or cement concrete foundation walls under the same, which shall be built up to the top of the floor beams or sleepers, and the sills of said partitions shall be of locust or other suitable hard wood; but if the walls are built of brick, five inches higher than the top of the floor beams or sleepers, any wooden sill may be used on which the studs shall be set.

SECTION 51.

Main Stud Partitions.

Fore and aft stud partitions.

In residence buildings where fore and aft stud partitions rest directly over each other, they shall run down between the wood floor beams and rest on the top plate of the partition below,

Fire stop.

And shall have the studding filled in solid between the uprights to the depth of the floor beams, with suitable incombustible materials.

SECTION 52.

Timber in Walls Prohibited.

Only inside lintels and brace blocks permissible.

No timber shall be used in any wall of any building where stone, brick, cement concrete or iron are commonly used, except inside lintels, as herein provided, and brace blocks not more than eight inches in length.

PART VII.

APARTMENT HOUSES AND TENEMENT HOUSES.

SECTION 53.

Apartment Houses and Tenement Houses.

Non-fireproof buildings.

Every non-fireproof building hereafter erected or altered for use as an apartment house or a tenement

Height.

house four stories and basement in height, or having a basement and three stories in height above a cellar, but in no case exceeding fifty-five feet in height, shall have the first story above the cellar or lowest story constructed fireproof. No such non-fireproof building shall exceed fifty feet in width.

Width.

Fireproof buildings.

Every building hereafter erected or altered for use as an apartment house or a tenement house exceeding fifty-five feet in height shall be constructed fireproof in accordance with the requirements of this Code for fireproof buildings. When any such building exceeds one hundred feet in height it shall not be less than forty feet in width.

Height.

Width.

Cellar Stairs.

Location when practicable.

The stairs from the cellar or lowest story to the floor next above, when placed within any apartment house or tenement house, shall be located, when practicable, to the rear of the staircase leading from the first story to the upper stories, and in all cases be inclosed with brick or stone walls, and such stairway shall be provided with self-closing fireproof doors at the top and bottom of said flight of stairs.

When placed underneath the first story staircase.

When such stairway is placed underneath the first story staircase, it shall be constructed fireproof and be roofed over with fireproof material, and be also inclosed with brick walls, with self-closing fireproof doors at the top and bottom of said flight of stairs.

When cellar stairs are located in open court.

When the stairs from the first story to the cellar or lowest story are located in an open court the door leading thereto from the first story may be placed underneath the staircase in the first story, and the strings and railings of such outside stairs shall be of iron, and if the stairs be inclosed from the weather, incombustible material only shall be used for that purpose.

Hallway Inclosures and Staircases.

Non-fireproof buildings.

In all non-fireproof apartment houses or tenement houses hereafter erected four stories and basement in height, but not exceeding fifty-five feet in height, and occupied or arranged to be occupied by more than two families on any floor, the staircase halls shall be inclosed with brick walls, and the said hall inclosures shall have a connecting hallway in the first story and extend to the street, inclosed with suitable walls of brick, or such other fireproof materials, including ceiling, as may be approved by the Commissioner of Buildings.

Connecting hallway to street.

Fireproof buildings, halls inclosed.

In fireproof apartment houses and tenement houses hereafter erected the stair halls and hallway leading to the street shall be inclosed in brick walls, and in other respects be constructed as required by this Code for fireproof construction.

When eight-inch brick walls may be used for inclosures.

Eight-inch brick walls not exceeding fifty feet in their vertical measurement, may inclose said halls and stairs, and be used as bearing walls where the distance between the outside bearing walls does not exceed thirty-three feet, and the area between the said brick inclosure walls does not exceed one hundred and eighty superficial feet.

Stairs to extend to roof.

At least one flight of the hall stairs in each of said buildings shall extend to the roof, and there be inclosed in a bulkhead. The bulkhead door shall not at any time be locked with a key, but it may be fastened on the inside by movable bolts or hooks.

Bulkhead doors not to be locked.

To support wall above entrance hall.

Whenever the walls inclosing the entrance hall of any apartment or tenement house hereafter erected support beams or girders carrying a brick wall above, the said walls shall be not less than twelve inches thick, laid in cement mortar.

Closet Prohibited Under First Story Staircase.

Open space.

No closet shall be constructed underneath the staircase of any story, but the space thereunder shall be left entirely open and kept free from incumbrance; but this

Space that may be tightly inclosed.

shall not prohibit the inclosing without openings the under portion of the first story staircase from the foot of the same to a point where the height from the floor line to the soffit of the staircase shall not exceed five feet.

Percentage of Lot Occupied.

Corner lots.

No apartment house or tenement house hereafter erected shall occupy more than ninety per centum of a corner lot,

Inside lots.

Or more than seventy per centum of any other lot,

Fire-escape space.

Provided, that the space occupied by outside fire escapes, projecting not more than four feet, shall not be deemed a part of the lot occupied.

Where measurements to be taken.

For the purposes of this Section the measurements shall be taken at the ground level,

When measurements at second story floor level.

Except that where any such building has a store on the first story, and that story is or is intended to be occupied for business purposes only, the measurements as to percentage of lot occupied may be taken at the level of the second story floor beams.

Yards.

Inside lots.

Behind every apartment house and tenement house four stories in height hereafter erected on an inside lot, there shall be a yard, not less than ten feet in

Open and unobstructed at rear of lot.

depth, extending across the entire width of the lot, and at every point open from the ground to the sky unobstructed, except that fire escapes or uninclosed outside stairs may project not over four feet from the rear line of the house.

Said yard shall be increased in depth six inches for every additional story in height of the building; Increased depth.

And may be decreased in depth one foot for every story in height of the building less than four stories. Decreased depth.

The depth of the yard behind every apartment house and tenement house hereafter erected upon a corner lot shall be not less than five feet in every part for the full width of the lot, and such depth need not to be increased when the building exceeds four stories in height, nor shall it be decreased in depth when the building is less than four stories in height, except that— Corner lot. Width of yard.

Where an apartment house or a tenement house is hereafter erected on a corner lot, and when any such building has a store on the first story the said yard or open space unencumbered except by fire-escapes projecting not more than four feet, may start at the level of the second story floor beams. When yard may start at second story.

Where a corner lot is more than fifty feet in width, the yard for that portion in excess of fifty feet shall conform to the provisions of this Section for inside lots. Corner lot, width of 50 feet.

Wherever an apartment house or a tenement house hereafter erected is upon a lot which runs through from one street to another street, and said lot is not less than seventy feet nor more than one hundred and twenty feet in depth, there shall be a yard space through the center of the lot midway between the two streets, which space shall extend across the full width of the lot, and shall never be less than twelve feet in depth from wall to wall; and such yard space may start at the level of the second story floor beams. Lot extending from street to street.

Where such lot is over one hundred and twenty feet in depth, such yard space shall be proportionately increased in depth, and shall be left through the center of the lot midway between the two streets, and shall extend across the entire width of the lot. When through lot exceeds certain dimensions.

Lot at intersection of two streets.

Where an apartment house or a tenement house hereafter erected is situated on a lot formed by the intersection of two streets at an acute angle, the yard of the said house need not extend across the entire width of the lot, provided that it extends to a point in line with the middle line of the block.

Courts.

Uncovered.

A court, that is, an open, unoccupied space other than a yard of an apartment house or a tenement house hereafter erected, shall not be covered by a roof or skylight, but every such court shall be at every point open from the ground to the sky, unobstructed other than by fire escapes.

Outer Courts.

Width for.

Where one side of an outer court, that is, a court extending to the street or yard, is situated on the lot line, the width of the said court, measured from the lot line to the opposite wall of the building, for apartment houses and tenement houses four stories and basement in height, shall be not less than four feet in any part;

Increased width.

And for every story of increase above four stories and basement in height of the said building, such width shall be increased six inches throughout the entire height of said court;

Decreased width.

And for every story of decrease in the height of the said building below four stories and basement, such width may be decreased one foot.

Width when between wings.

Where an outer court is situated between wings or parts of the same building, or between different buildings on the same lot, the width of the said court, measured from wall to wall, for apartment houses and tenement houses four stories and basement in height, shall be not less than eight feet in any part;

Increased width.

And for every story of increase above four stories and basement in the height of the said building, such width shall be increased six inches throughout the entire height of the said court;

Decreased width.

And for every story of decrease in the height of the said building below four stories and basement, such width of the said court may be decreased one foot.

Inner Courts.

Court on lot line.

Where one side of an inner court, that is, a court not extending to the street or yard, is situated on the lot line, the width of the said court measured from the lot line to the opposite wall of the building, for apartment houses and tenement houses four stories and basement in height, shall be not less than six feet in any part, and its other horizontal dimensions shall be not less than twelve feet in any part;

Increased width.

And for every story of increase in the height of the said building above four stories and basement, such width shall be increased six inches throughout the entire height of said court;

Increased length.

And the other horizontal dimensions shall be increased one foot throughout the entire height of said court;

Decreased width.

And for every story of decrease in the height of the said building below four stories and basement, such width may be decreased six inches throughout the entire height of the said court;

Decreased length.

And the other horizontal dimensions may be decreased one foot.

Inner court on other than lot line.

Where an inner court is not situated upon the lot line, but is inclosed on all four sides, the least horizontal dimension of the said court for apartment houses and tenement houses four stories and basement in height, shall be not less than twelve feet;

Increased dimensions.

And for every story of increase above four stories and basement in the height of the said building, the said court shall be increased one foot in each horizontal dimension throughout the entire height of said court;

Decreased dimensions.

And for every story of decrease in the height of the said building below four stories and basement, the horizontal dimensions of the said court may be decreased six inches in each direction.

Width of offsets or recesses.

No window, except windows of water-closet compartments, bathrooms or halls shall open upon any offset or recess less than six feet in width.

Outer and Inner Courts.

Angles with windows.

Nothing contained in this Section concerning outer and inner courts shall be construed as preventing windows at the angles of said courts.

When courts may start at second story.

When an apartment house or a tenement house hereafter erected has a store on the first story, and that story is, or is intended to be occupied for business purposes only, the outer and the inner courts may start at the level of the second story floor beams.

Rear Tenement Houses or Apartment Houses.

Prohibiting.

No separate tenement house or apartment house shall hereafter be erected upon the rear of a lot fifty feet or less in width where there is an apartment house or a tenement house on the front of the said lot,

Nor upon the front of any such lot upon the rear of which there is such a house.

Buildings on Same Lot With Tenement Houses or Apartment Houses.

Space between.

If any building is hereafter placed on the same lot with a tenement house or an apartment house, the space

between the said buildings shall always be of such size and arranged in such manner as is prescribed for yards in rear of apartment houses and tenement houses.

Court or yard space.

And no building of any kind shall be hereafter placed upon the same lot with a tenement house or an apartment house so as to decrease the minimum size of courts or yards as hereinbefore prescribed.

Comply with this Code.

And if any tenement house or apartment house is hereafter erected upon any lot upon which there is already another building, it shall comply with all the provisions of this Section, and in addition the space between the said building and the said tenement house or apartment house shall be of such size and arranged in such manner as is prescribed in this Section for inner courts, the height of the highest building on the lot to regulate the dimensions.

Highest building to regulate dimensions.

Rooms, Lighting and Ventilation Of.

Window openings.

In every apartment house or tenement house hereafter erected every room, except water-closet compartments and bathrooms, shall have at least one window opening directly upon the street or upon a yard or court.

Windows in Rooms.

Window area proportioned to room.

In every apartment house or tenement house hereafter erected the total window area in each room, except water-closet compartments and bathrooms, shall be at least one-tenth of the superficial area of the room,

Height to top above floor.

And the top of at least one window shall be not less than seven feet six inches above the floor, and the upper half of it shall be made so as to open the full width.

Area of window.

No such window shall be less than twelve square feet in area between the stop beads.

Windows in Water-Closet Compartments and Bathrooms.

Size of window. In every apartment house or tenement house hereafter erected the total window area in a water-closet compartment or bathroom shall be not less than three square feet in area for each,

Width of window. And no such window shall be less than one foot in width, measured between stop beads.

Rooms, Size Of.

Minimum. In every apartment house and tenement house hereafter erected all rooms, except water-closet compartments and bathrooms shall be of the following minimum sizes:

One room, least area for. In each apartment there shall be at least one room containing not less than one hundred and twenty square feet of floor area,

Other rooms, least area for. And each other room shall contain at least seventy square feet of floor area.

Height for ceiling. Each room shall be in every part not less than nine feet high from the finished floor to the finished ceiling;

Attic room. Provided that an attic room need be nine feet high in but one-half its area.

Alcoves.

Alcove rooms must conform to all the requirements of other rooms.

Public Hallways.

Windows required. In every apartment house or tenement house hereafter erected, exceeding three stories and basement in height, every public hallway, that is, a corridor not

within an apartment, shall have at least one window opening directly upon the street or upon a yard or court.

Width and height for window.

One at least of the windows provided to light each public hallway or part thereof, shall be at least two feet six inches wide and five feet high, measured between stop beads.

Meaning of hall.

Any part of a hallway which is shut off from any other part of said hallway by a door or doors, shall be deemed a separate hall or separate hallway within the meaning of this Section.

Three stories in height.

In every apartment house and tenement house hereafter erected not exceeding three stories and basement in height, where the public hallway is not provided with a window opening directly to the outer air, sash doors admitting light to the public hallways from the apartments shall be provided.

Sash doors.

Stair Hallway Windows.

Aggregate area.

In every apartment house or tenement house hereafter erected exceeding three stories and basement in height, the aggregate area of windows to light or ventilate stair halls, that is, the public hallways which include the stairs, stair landings and those portions of the hallways through which it is necessary to pass in going between the entrance floor and the roof, shall be at least eighteen square feet for each floor.

Size of window.

There shall be provided for each story at least one of said windows, which shall be at least two and a half feet wide and five feet high, measured between the stop beads.

Sash door equivalent to window.

A sash door shall be deemed the equivalent of a window in public hallways and stair halls, provided that such door contains the amount of glazed surface prescribed for such windows.

Privacy.

Access to rooms.

In every apartment of three or more rooms in an apartment house or a tenement house hereafter erected, access to every living room and bedroom and to at least one water-closet compartment shall be had without passing through any bedroom.

Existing Buildings.

Percentage of lot.

No now existing apartment house or tenement house shall hereafter be enlarged, or its lot be diminished, so that the house shall occupy more than the percentage of lot allowed by this Section for similar new houses.

Yards.

No now existing apartment house or tenement house shall hereafter be enlarged or its lot be diminished, so that the yard shall be less than specified in this Section for similar new houses,

Open space, excepting fire escapes.

And such yard shall be at every point open from the ground to the sky, except that fire escapes or uninclosed outside stairs may project not over four feet from the rear line of the house.

Additional rooms and halls.

Any additional room or hall that is hereafter constructed or created in a now existing apartment house or tenement house shall comply in all respects with the provisions of this Section for new houses.

Lights in Public Hallways.

Artificial light.

In every apartment house and tenement house a proper light shall be kept burning by the owner in the public hallways, near the stairs, upon the entrance floor, and upon the second floor above the entrance floor of said house, every night from sunset to sunrise throughout the year,

And upon all other floors of the said house from sunset until ten o'clock in the evening. Hours prescribed

Skylights.

In every apartment house and tenement house there shall be in the roof, directly over each stair well, a ventilating skylight with both ridge ventilators and fixed louvres, the glazed surface thereof to be not less than twenty square feet in area, of one-quarter-inch glass in metal frames, and with wire screens over and under the glass. Area of glazed surface.

Provided, that this requirement shall not apply to a now existing apartment house or tenement house now having a bulkhead in the roof over the main stairs, which bulkhead is provided with windows made so as to readily open, and with not less than twelve square feet of glass in the top of said bulkhead. Bulkhead window.

Chimneys or Fireplaces.

In every apartment house and tenement house there shall be adequate chimneys running through every floor, with an open fireplace or grate, or place for a stove, properly connected with one of said chimneys for every apartment. Flue openings.

Area for Vent Shafts.

Every vent shaft hereafter constructed in an apartment house or a tenement house four stories and basement in height shall be at least twelve square feet in area, and the least dimension of such shaft shall be not less than three feet; Area of. Least dimensions.

And if the building be above four stories and basement in height such shaft shall throughout its entire height be increased in area two square feet for each additional story in height; Increase of area.

Decrease of area.

And for each story in height less than four stories and basement such shaft may be decreased in area one square foot.

Uncovered.

A vent shaft may be inclosed on all four sides, but shall not be roofed or covered over in any way.

Bottoms of Shafts, Courts, Areas and Yards.

Depth below floor level.

In every apartment house and tenement house hereafter erected the bottom of all shafts, courts, areas and yards which extend to the basement for light or ventilation of living rooms, shall be six inches below the floor level of the part occupied or intended to be occupied.

Connected with sewer.

All shafts, courts, areas and yards shall be properly concreted, graded and drained, and shall be properly connected with the street sewer so that all water may pass freely into it.

Basements and Cellars.

Conditions for occupancy.

In apartment houses and tenement houses hereafter erected no room in the cellar or in the basement shall be constructed, altered, converted or occupied for living purposes unless all of the following conditions are complied with:

Height of ceiling.

1. Such room shall be at least eight feet high in every part from the floor to the ceiling.

Existing building.

Provided, that in buildings already erected and not now used as tenement houses, but hereafter altered or converted to such use, such room shall be not less than seven feet high in every part.

Ceiling above ground.

2. Ceiling of such room shall be at least two feet and six inches above the surface of the street or ground outside of or adjoining the same.

3. There shall be appurtenant to such room the use of a separate water-closet, constructed and arranged as required by this Section for water-closet compartments. Water-closet.

4. Such room shall have a window or windows opening upon the street, or upon a yard or court. The total area of windows in such room shall be at least one-eighth of the superficial area of the room, and one-half of the sash shall be made to open the full width, and the top of each window shall be within six inches of the ceiling. Window openings. Top of windows.

5. All walls surrounding such room shall be damp-proof. Walls damp-proof.

6. The floor of such room shall be damp-proof and water-proof. Floor waterproof.

Every apartment house and tenement house hereafter erected shall have all walls below the ground level and all cellar or lower floors damp-proof and water-proof. Damp-proof and waterproof.

When necessary to make such walls and floors damp-proof and water-proof, the damp-proofing and water-proofing shall run through the walls and up the same as high as the ground level, and shall be continued throughout the floor. Below ground level.

And the said cellar or lowest floor shall be properly constructed so as to prevent dampness or water from entering. Cellar floor construction.

Water-Closet Accommodations.

In every apartment house hereafter erected there shall be a separate water-closet in a separate compartment within each apartment, Separate water-closets.

Provided that where there are apartments consisting of but one or two rooms, there shall be at least one water-closet for every three rooms. Exception.

Number of water-closets, privy sinks, etc.

Every tenement house hereafter erected shall be provided with as many water-closets, improved privy sinks, or other similar receptacles as the Commissioner of Buildings or the Department of Health may require, but in no case shall there be less than one for every fifteen occupants.

General toilet room.

Nothing in this Section in regard to the separation of water-closet compartments from each other shall apply to a general toilet room hereafter placed in any apartment house or tenement house, provided such water-closets are supplemental to the water-closet accommodations required by this Section for the use of the occupants of any said house.

Window openings.

All water-closet compartments in every apartment house or tenement house hereafter erected shall have a window opening upon the street or yard or upon a court or vent shaft.

Artificial lights.

Every water-closet compartment shall be provided with proper means of lighting the same at night. If fixtures for gas or electricity are not provided in said compartment, then the door of said compartment shall be provided with obscured glass panels, or with an obscured glass transom, not less in area than four square feet.

Sash door or transom.

Floors.

The floor of every water-closet compartment shall be made water-proof with asphalt, tile, stone, Portland cement concrete, metal or some other water-proof material; and such water-proofing shall extend at least six inches above the floor, so that the said floor can be washed or flushed out without leaking.

Drip trays prohibited.

No drip trays shall be permitted.

Woodwork prohibited.

No water-closet fixtures shall be inclosed with any woodwork.

Storage of Combustible Materials.

Forbidden.

No tenement house, nor apartment house, nor any

part thereof, shall be used as a place of storage for any article or material dangerous to life or health, nor for the storage of feed, hay, straw, excelsior or cotton, nor for the storage or handling of rags, except under such conditions as may be prescribed by the Fire Department, under authority of a written permit issued by said Department.

Articles dangerous to life or health.

Conditions.

Dangerous Businesses.

No bakery and no place of business in which fat is boiled shall be maintained in any tenement house or apartment house which is not fireproof throughout, unless the ceiling and sidewalls of the said place where fat boiling is done, or baking ovens are used, are made safe by fireproof materials around the same, and there shall be no openings either by door or window, dumb-waiter shafts or otherwise, between said bakery or said place where fat is boiled in any tenement house or apartment house and the other parts of the said building.

Bakeries and fat boiling.

Certain openings prohibited.

All transoms and windows opening into halls from any portion of a tenement house or apartment house where paint, oil, spirituous liquors or drugs are stored for the purpose of sale or otherwise, shall be glazed with wire glass in metal frames or they shall be removed and the opening shall be closed up as solidly as the rest of the wall, and all doorways leading into any such hall from such portion of said house shall be protected with standard fire-doors.

Openings into halls from drug stores, etc.

Fireproof doors.

Fire-Escapes.

In all apartment houses or tenement houses any apartment not containing any room fronting upon the

Allowed projection for.

street or yard shall have a fire-escape in a court, projecting not more than four feet from the wall of the house, constructed in accordance with requirements of Section 104 of this Code.

Location for fire-escapes.

In any such building each and every apartment therein above the first story shall open directly to an outside fire-escape from at least one room other than a bath-room or water-closet compartment, and shall not include a window of a stair hall.

PART VIII.

VAULTS, AREAWAYS AND CELLARS.

SECTION 54.

Cellars to be Connected with Sewers.

Street sewer connections.

Before the walls of buildings are carried above the foundation walls the cellar shall be connected with the street sewers.

When no sewer in street.

Should there be no sewer in the street, or if the cellars are below water level, or below the sewer level, then provision shall be made by the owner to prevent water accumulating in the cellars to the injury of the foundations.

SECTION 55.

Vaults Under Sidewalks.

Walls of vaults.

In buildings where the space under the sidewalks is utilized, a sufficient stone or brick wall, or brick arches between iron or steel beams, shall be built to retain the roadway of the street, and the side, end or party walls of such building shall extend under the sidewalk, of sufficient thickness, to such wall.

The roofs of all vaults shall be of incombustible material. Vault roofs.

Openings in the roofs of vaults for the admission of coal or light, or for manholes, or for any other purposes, if placed outside the area line, shall be covered with glass set in iron frames, each unit of glass to measure not more than sixteen square inches, or with iron covers having a rough surface, and rabbeted into or made flush with the sidewalk. Openings on sidewalks.

When any such cover is placed in any sidewalk, it shall be placed as near as practicable to the outside line of the curb. Location for covers.

All vaults shall be thoroughly ventilated. Ventilation.

SECTION 56.

Areaways.

All areaways shall be properly protected with suitable railings, or be covered over. Protection.

When areaways are covered over, iron, or iron and glass combined, stone or other incombustible materials shall be used, and be supported on brick or stone walls, or on iron or steel beams. Coverings.

SECTION 57.

Cellar Floors.

The floor of the cellar or lowest story in every dwelling house, apartment house, tenement house, lodging house, hotel, apartment hotel, workshop, factory, school, church, hospital and asylum hereafter erected— Applicable to certain buildings.

Shall be concreted not less than four inches thick. Concreted.

Where wood floors are to be laid in such cellars or lowest stories, the sleepers shall be placed on top of the concrete. Placing of sleepers.

SECTION 58.

Cellar Ceilings.

When beams are of wood.

The ceiling over every cellar or lowest floor in every residence building, whether occupied by one or more families, more than three stories in height, hereafter erected, when the beams are of wood—

Metal-lathed and plastered.

Shall be lathed with iron or wire lath and plastered thereon with two coats of brown mortar of good materials,

Plaster boards.

Or shall be covered with plaster boards not less than one-half inch in thickness, made of plaster and strong fibre, and all joints be made true and well pointed.

PART IX.

WOOD BEAMS, GIRDERS AND COLUMNS.

SECTION 59.

Wood Beams.

Separation of beams.

All wood beams and other timbers in any wall of a building built of stone, brick, concrete or iron, shall be separated from the beam or timber entering in the opposite side of the wall by at least eight inches of solid mason work; such separation may be obtained by corbeling or by staggering the beams.

Minimum Thickness for Wood Beams.

Least thickness for floor and roof beams.

No wood floor beams or wood roof beams used in any building, hereafter erected, except in a frame building, shall be of a less thickness than three inches, nor less depth than ten inches.

Trimmer and Header Beams, and Tail Beams.

All wood trimmer and header beams shall be proportioned to carry with safety the loads they are intended to sustain. Properly proportioned.

The ends of all tail beams shall be properly framed into the header beams. Framing.

Stirrup Irons.

Every wood header beam more than four feet long, used in any building, shall be suitably framed and be hung to the trimmer beams in stirrup-irons of proper thickness for the size of the timbers. For wood headers more than four feet in length.

When it is not practicable to frame the ends of tail beams into header beams, the ends of the tail beams shall be hung to the header beams by stirrup-irons of proper size and strength. Stirrups for tail beams.

Bearings for Wood Beams.

Every wood beam, except header beams, shall rest at one end four inches in the wall, or upon a girder as authorized by this Code, unless the wall is properly corbelled out four inches, in which case the brickwork or corbelling shall extend to the top of the floor beams. Ends to rest on walls or girders.

Bevel Ends for Wood Beams.

The ends of all wood floor and roof beams, where they rest on brick walls, shall be cut to a bevel of three inches on their depth. When resting on brick walls.

Ends of Beams Not to Rest on Stud Partitions.

In no case shall either end of a floor or roof beam be supported on stud partitions, except in frame buildings. Exception for frame buildings

Cross Bridging for Beams.

Distance apart for bridging.

All wood floor and wood roof beams shall be properly bridged with cross bridging, and the distance between bridging or between bridging and walls shall not exceed eight feet.

Beams Near Flues.

Distance from flues.

All wood beams shall be trimmed away from all flues and chimneys whether the same be a smoke, air or any other flue or chimney. The trimmer beam shall be not less than twelve inches from the inside face of a flue and four inches from the outside of a chimney breast, and the header beam not less than two inches from the outside face of the brick or stone work of the same.

Distance from boiler and furnace flues.

For the smoke flues of boilers and furnaces where the brickwork is required to be more than eight inches in thickness, the trimmer beam shall be not less than four inches from the outside of the brickwork, and the header beam shall be not less than two inches from the outside of the brickwork.

Distance of header beam from chimney breast.

The header beam, carrying the tail beams of a floor, and supporting the trimmer arch in front of a fireplace, shall be not less than twenty inches from the chimney breast.

To Calculate Safe Distributed Load on Wood Floor Beams.

Formula.

The safe carrying capacity of wood beams for uniformly distributed loads shall be determined by multiplying the area in square inches by its depth in inches and dividing this product by the span of the beam in feet. This result is to be multiplied by—

Co-efficients.

70 for hemlock,
90 for spruce and white pine,
120 for oak, and by
140 for yellow pine.

The safe carrying capacity of short span timber beams shall be determined by their resistance to shear in accordance with the unit stresses fixed by Section 138 of this Code. Short span beams.

SECTION 60.

Anchors and Straps for Wood Beams and Girders.

Each tier of beams shall be anchored to the side, front, rear or party walls at intervals of not more than six feet apart, with good, strong, wrought-iron anchors of not less than one and a half inches by three-eighths of an inch in size, well fastened to the side of the beams by two or more nails made of wrought iron at least one-fourth of an inch in diameter. Wall anchors.

Girder Straps and Anchors.

Where the beams are supported by girders, the girders shall be anchored to the walls and fastened to each other by suitable iron straps. Anchored to walls and strapped at joints.

EXAMPLES.*

What will be the uniformly distributed safe load in pounds, according to the above requirement, for a spruce beam 3″ x 10″ — 20′ span?

$$\frac{\text{Area.}\quad 3'' \times 10'' \quad \text{Depth.}\quad \times 10''}{20'\ \text{span.}} \quad \text{Result.} \quad \text{and this } 15 \times \text{Co-efficient. } 90 = \text{Safe distributed load. } 1{,}350 \text{ lbs.}$$

What will be the uniformly distributed safe load in pounds, according to the above requirement, for a yellow-pine beam 4″ x 12″—22′ span?

$$\frac{\text{Area.}\quad 4'' \times 12'' \quad \text{Depth.}\quad \times 12''}{22'\ \text{span.}} \quad \text{Result.} \quad \text{and this } 26\ 2 \times \text{Co-efficient. } 140 = \text{Safe distributed load. } 3{,}668 \text{ lbs.}$$

Beam Straps.

Beams butted and strapped.

The ends of wood beams resting upon girders shall be butted together end to end and strapped by wrought-iron straps of the same size and distance apart, and in the same beam as the wall anchors, and shall be fastened in the same manner as said wall anchors.

When lapped to be spiked.

Or they may lap each other at least twelve inches and be well spiked or bolted together where lapped.

Wood Anchor Strips.

Permanently let into the beams.

Each tier of beams front and rear, opposite each pier, shall have hard wood anchor strips dovetailed into the beams diagonally, which strips shall cover at least four beams and be one inch thick and four inches wide, but no such anchor strips shall be let in within four feet of the center line of the beams;

Temporary wood anchor strips.

Or wood strips may be nailed on the top of the beams and kept in place until the floors are being laid.

Pier Anchors.

Front and rear piers to be anchored.

Every pier and wall, front or rear, shall be well anchored to the beams of each story, with the same size anchors as are required for side walls, which anchors shall hook over the fourth beam.

SECTION 61.

Wood Columns and Plates.

Square ends.

All timber columns and posts shall be squared at the ends at right angles to their axes.

Cap and base plates.

To prevent the unit stresses from exceeding those fixed in this Code, timber or iron or steel cap and base plates shall be provided.

Where the cap plate of a wood post supports a wood girder and directly on top of the girder is an iron base plate of the wood post above, the said cap and base plates shall be connected by pintles of metal passing through the girder; these pintles may be of round bars of wrought iron or steel of proper size and not less than four in number, or an oval-shaped hollow cast-iron pintle of proper thickness may be used, in each case adequate to transmit the load. Pintles.

Additional iron or steel cheek plates shall be placed between the cap and base plates and bolted to the girders when required to transmit the loads with safety. Cheek plates.

SECTION 62.

Timber for Trusses.

When compression members of trusses are of timber they shall be strained in the direction of the fibre only. In compression.

When timber is strained in tension, it shall be strained in the direction of the fibre only. In tension.

The working stress in timber struts of pin-connected trusses shall not exceed 75 per cent. of the working stresses established in Section 138 of this Code. Struts in pin-connected trusses.

Bolts and Washers for Timber Work.

All bolts used in connection with timber and wood beam work shall be provided with washers of such proportions as will reduce the compression on the wood at the face of the washer to that allowed in Section 138 of this Code, supposing the bolt to be strained to its limit. Washers.

SECTION 63.

Mill Construction.

Minimum size of timber.

The term "mill construction" shall apply to all floors and roofs in which no wood floor or roof beam, girder, post or other timber shall be less than eight inches in either of its cross dimensions.

Floor plank.

The floor and roof beams shall be covered over with plank not less than three inches in thickness, splined or tongued and grooved, and for the floors there shall be laid on top of the plank in a crosswise or diagonal direction boards not less than one inch in thickness, tongued and grooved and properly nailed.

Water-proof material.

Between the floor boards and the planking there shall be placed two thicknesses of carefully laid water-proof material, and this material shall be flashed at least three inches around all walls and posts or columns and openings with moldings or base.

Flashing.

Posts, when of wood.

If wood posts are used to support mill constructed floors and roofs none shall be of smaller sectional area than one hundred square inches, nor be less than ten inches in either dimension, except for posts in the top story, which shall not be of smaller sectional area than sixty-four square inches, nor be less than eight inches in either dimension. Wood posts shall have cast-iron caps or boxes so constructed as to form a base for the next post above. The ends of the girders shall be secured to the cap or box in such manner as to be self-releasing.

PART X.

CHIMNEYS, FLUES, FIREPLACES AND HEATING PIPES.

SECTION 64.

Trimmer Arches.

To support hearths.

All fireplaces and chimney breasts where mantels are placed, whether intended for ordinary fireplace uses or not, shall have trimmer arches to support hearths—

Width of trimmer arches.

And the said arches shall be at least twenty inches in width, measured from the face of the chimney breast, and they shall be constructed of brick, stone, burnt clay or concrete.

Length of trimmer arches.

The length of a trimmer arch shall be not less than the width of the chimney breast.

Wood centres under trimmer arches.

Wood centres under trimmer arches shall be removed before plastering the ceiling underneath.

Hearth under heater.

If a heater is placed in a fireplace, then the hearth shall be the full width of the heater.

Mantels.

All fireplaces in which heaters are placed shall have incombustible mantels.

Woodwork back of a summer piece.

No wood mantel or other woodwork shall be exposed back of a summer piece; the iron work of the summer piece shall be placed against the brick or stone work of the fireplace.

Fire boards.

No fireplace shall be closed with a wood fire board.

SECTION 65.

Chimneys, Flues and Fire-places.

Joints struck smooth.

All fireplaces and chimneys in stone or brick walls in any building hereafter erected, except as herein other-

wise provided, and any chimney or flues hereafter altered or repaired, without reference to the purpose for which they may be used, shall have the joints struck smooth on the inside, except when lined on the inside with well-burnt clay or terra-cotta pipe.

Parging of flues prohibited.

No parging mortar shall be used on the inside of any fireplace, chimney or flue.

Fireplace backs, thickness for.

The fire-backs of all fireplaces hereafter erected shall be not less than eight inches in thickness, of solid brickwork, nor less than twelve inches if of stone.

Lining behind grate in fireplace.

When a grate is set in a fireplace, a lining of fire-brick, at least two inches in thickness, shall be added to the fire-back, unless soap stone, tile or cast iron is used, and filled solidly behind with fireproof material.

Thickness for smoke flues of boilers, furnaces, etc.

The brickwork of the smoke flues of all low-pressure boilers, furnaces, bakers' ovens, large cooking ranges, large laundry stoves, and all flues used for a similar purpose shall be at least eight inches in thickness, and lined continuously on the inside with well-burnt clay or terra-cotta pipe, and shall be capped with terra cotta, stone or cast iron.

Capped.

Inside of flues for boilers.

The walls of all high-pressure boiler flues shall be not less than twelve inches, and the inside four inches of such walls shall be firebrick, laid in fire mortar, for a distance of twenty-five feet in any direction from the source of heat.

Smoke flues of steam boilers.

All smoke flues of smelting furnaces or of steam boilers, or other apparatus which heat the flues to a high temperature, shall be built with double walls of suitable thickness for the temperature with an air space between the walls, the inside four inches of the flues to be of fire-brick, laid in fire mortar, for a distance of not less than twenty-five feet in any direction from the source of heat.

Outside metal flues.

For any now existing brick building where it becomes necessary to provide a smoke flue of larger size than

any flue within the building, such flue may be placed on the outside of the building, but within the lot lines of same, and be made round in shape and of galvanized sheet metal, not less than one-tenth of an inch in thickness, properly riveted together at all joints, and carried up to a height not less than ten feet above the roof, and be properly braced at intervals for its entire length, with flat iron bands secured with expansion bolts to the wall, leaving a free air space of not less than four inches between the outside of the metal flue and the brick wall of the building, and have a cleanout door at the bottom. This metal flue shall rest on a suitable cast-iron plate at the bottom, supported on a suitable foundation of masonry.

Height for smoke flues.

All smoke flues shall extend at least three feet above a flat roof, and at least two feet above the highest point of a peak roof.

Tops of chimneys on three story dwellings and stables.

On dwelling houses and stables, three stories or less in height, not less than six of the top courses of a chimney may be laid in pure cement mortar and the brickwork carefully bonded and anchored together in lieu of coping.

Chimney Flues to be Lined with Pipe.

Smoke flues to be lined with cast iron or clay pipe.

In all buildings hereafter erected every smoke flue, except the flues hereinbefore mentioned, shall be lined continuously on the inside with well-burnt clay, or terra cotta pipe, made smooth on the inside, from the bottom of the flue, or from the throat of the fireplace, if the flue starts from the latter, and carried up continuously to the extreme height of the flue. The ends of all such lining pipes shall be made to fit close together, and the pipe shall be built in as the flue or flues are carried up. Each flue shall be inclosed on all sides with not less than eight inches of solid brick-

Ends of lining pipe to fit close.

Brickwork.

work properly bonded together, excepting only, that the withes or brickwork between the lined flues on the inside of the chimney may be four inches in thickness.

Area for smoke flues.

No smoke flue shall be less than eight by eight inches, nor any furnace or laundry stove flue less than eight by twelve inches, exclusive of the thickness of the lining in each case.

Flues for gas stoves.

Flues for the use of gas stoves or gas grates may be of less dimensions within pipe or tile-lined flues, but no such flue shall be less than four inches clear inside diameter of the pipe or tile; this shall not prevent the placing together of not more than four such gas flues within an inclosure of brickwork of the thickness hereinbefore stated, including the lining of same.

Flues to be Left Clean.

At completion of building.

All flues in every building shall be properly cleaned and all rubbish removed, and the flues left smooth on the inside upon the completion of the building.

SECTION 66.

Chimney Supports.

Forbidding supports of wood.

No chimney shall be started or built upon any floor or beam of wood.

Corbeling.

In no case shall a chimney be corbeled out more than eight inches from the wall, and in all such cases the corbeling shall consist of at least five courses of brick.

Piers supporting chimneys.

Where chimneys are supported by piers, the piers shall start from the foundation on the same line with the chimney breast, and shall be not less than twelve inches on the face, properly bonded into the walls.

When a chimney is to be cut off below, in whole or in part, it shall be wholly supported by stone, brick, iron or steel. Supports for chimneys cut off below.

All chimneys which shall be dangerous in any manner whatever, shall be repaired and made safe, or taken down. Unsafe chimneys.

SECTION 67.

Chimneys of Cupolas.

Iron cupola chimneys of foundries shall extend at least ten feet above the highest point of any roof within a radius of fifty feet of such cupola, and be covered on top with a heavy wire netting, and capped with a suitable spark arrester. Foundry cupolas.

No woodwork shall be placed within two feet of the cupola. Distance for woodwork.

SECTION 68.

Hot Air Flues, Pipes and Vent Ducts.

All stone or brick hot air flues and shafts shall be lined with tin, galvanized iron or burnt clay pipes. Hot air flues to be lined.

No wood casing, furring or lath shall be placed against or cover any smoke flue or metal pipe used to convey hot air or steam. Woodwork not to be placed against flues.

No smoke pipe shall pass through any floor. Forbidding smoke pipes through floors.

No stove pipe shall be placed nearer than nine inches to any lath and plaster or board partition, ceiling or any woodwork. Stove pipes, distance from ceilings and partitions.

Smoke pipes of laundry stoves, large cooking ranges and of furnaces shall be not less than fifteen inches from any woodwork, unless they are properly guarded by metal shields; if so guarded, stove pipes shall be not less than nine inches distant. Metal shields. Distance.

Smoke pipes through partitions.

Where smoke pipes pass through a lath and plaster partition they shall be guarded by galvanized iron ventilated thimbles at least twelve inches larger in diameter than the pipes, or by galvanized iron thimbles built in at least eight inches of brickwork.

Smoke Pipes Through Roofs.

Permit necessary.

No smoke pipe shall pass through the roof of any building unless a special permit be first obtained from the Commissioner of Buildings for the same. If a permit is so granted, then the roof through which the smoke

How protected.

pipe passes shall be protected in the following manner: A galvanized iron ventilated thimble of the following dimensions shall be placed; in case of a stove pipe, the diameter of the outside guard shall be not less than twelve inches, and the diameter of the inner one eight inches larger than the smoke pipe, and for all furnaces, or where similar large hot fires are used, the diameter of the outside guard shall be not less than eighteen inches, and the diameter of the inner one twelve inches larger in diameter than pipe. The smoke pipe

Thimbles.

thimbles shall extend from the under side of the ceiling or roof beams to at least nine inches above the roof, and they shall have openings for ventilation at the lower end where the smoke pipes enter, also at the top of the guards above the roof.

Smoke pipe of boiler through roof.

Where a smoke pipe of a boiler passes through a roof, the same shall be guarded by a ventilated thimble, same as before specified, thirty-six inches larger than the diameter of the smoke pipe of the boiler.

Hot Air Pipes in Walls.

Covering of brick or stone.

Tin or other metal pipes in brick or stone walls, used or intended to be used to convey heated air, shall be covered with brick or stone at least four inches in thickness.

Hot Air Pipes in Stud Partitions.

Woodwork to be guarded.

Woodwork near hot air pipes shall be guarded in the following manner: A hot air pipe shall be placed inside another pipe, one inch larger in diameter, or a metal shield shall be placed not less than one-half inch from the hot air pipe; the outside pipe or the metal shield shall remain one and a half inches away from the woodwork, and the latter must be tin lined, or in lieu of the above protection, four inches of brickwork may be placed between the hot air pipe and the woodwork. This shall not prevent the placing of metal lath and plaster directly on the face of hot air pipes or the placing of woodwork on such metal lath or plaster, provided the distance between such woodwork and the metal lath is not less than seven-eighths of an inch.

Distance from furnace.

No vertical hot air pipe shall be placed in a stud partition, or in a wood inclosure, unless it be at least eight feet distant in a horizontal direction from the furnace.

Hot Air Pipes in Closets.

Hot air pipes in closets shall be double, with a space of one inch between them.

Horizontal Hot Air Pipes.

Distance from combustible ceiling.

Horizontal hot air pipes shall be placed six inches below the floor beams or ceiling; if the floor beams or

ceiling are plastered and protected by a metal shield, then the distance shall be not less than three inches.

Ducts for Ventilation.

Construction.

Vent flues or ducts for the removal of foul or vitiated air, in which the temperature of the air cannot exceed that of the rooms, may be constructed of iron, or other incombustible material, and shall not be placed nearer than one inch to any woodwork, and no such pipe shall be used for any other purpose.

Material and thickness of same in fireproof buildings.

In buildings of fireproof construction ventilating shafts passing through floors shall be constructed of fireproof material not less than four inches in thickness. Any opening in such ducts or shafts shall be protected by automatically closing fire-doors or by metal louvres riveted into metal frames, and such ducts shall open to the outside of the building.

Vent Ducts in Public Schools.

How constructed.

In the support or construction of such ducts, if placed in a public school-room, no wood furring or other inflammable material shall be nearer than two inches to said flues or ducts, and shall be covered on all sides, other than those resting against brick, terra cotta, or other incombustible material, with metal lath plastered with at least two heavy coats of mortar, and having at least one-half inch air space between the flues or ducts and the lath and plaster.

SECTION 69.

Steam and Hot Water Heating Pipes.

Distance from woodwork.

Steam or hot water heating pipes shall not be placed within two inches of any timber or woodwork, unless

the timber or woodwork is protected by a metal shield; then the distance shall be not less than one inch.

Through floors, how protected.

All steam or hot water heating pipes passing through floors and ceilings or lath and plastered partitions shall be protected by a metal tube passing entirely through floor and ceilings or partitions one inch larger in diameter than the pipe, having a metal cap at the floor, and where they are run in a horizontal direction between a floor and ceiling, a metal shield shall be placed on the underside of the floor over them, and on the sides of wood beams running parallel with said pipes.

Wood inclosing boxes to be lined with metal.

All wood boxes or casings inclosing steam or hot water heating pipes and all wood covers to recesses in walls in which steam or hot water heating pipes are placed, shall be lined with metal.

Incombustible pipes.

All pipes or ducts used to convey air warmed by steam or hot water shall be of metal or other fireproof material.

Pipe coverings.

All steam and hot water pipe coverings shall consist of fireproof materials only.

Plumbing Pipes.

Passing through floors.

Cold water or other exposed plumbing pipes shall have the surrounding air space closed off at the ceiling and floor line of any floor through which any such pipe or pipes shall be carried.

PART XI.

GENERAL CONSTRUCTION.

SECTION 70.

Ducts for Pipes.

Of fireproof material.

All ducts for pipes, wires, and other similar purposes shall be inclosed on all sides with fireproof material,

Fire-stopped at each floor.

And the opening through each floor shall be properly fire-stopped.

Doors in ducts.

Any door opening in such duct shall be provided with a self-closing fireproof door.

Construction.

If the area of such duct exceeds four square feet, the thickness of the fireproof inclosure shall be not less than four inches, and shall extend by a proper fireproof outlet to and through the roof.

SECTION 71.

Studded-Off Spaces.

Fire-stopped on underside of beams above.

Where walls are studded-off, the space between the inside face of the wall and the studding shall be fire-stopped with fireproof material placed on the underside of the wood beams above, for a depth of not less than four inches, and be securely supported;

Deafening between beams over the studded-off spaces.

Or the beams directly over the studded-off space shall be deafened with not less than four inches of fireproof material, which may be laid on boards cut in between the beams.

SECTION 72.

Sheathing and Wainscoting.

Forbidding use of wood for, in certain buildings.

No wall or ceiling in any building hereafter erected other than buildings or portions of buildings occupied exclusively for dwelling or club purposes shall be covered with wood sheathing, or any combustible material.

Exception for wainscoting as described.

But this shall not exclude, excepting in theatres, the use of wood wainscoting to a height not to exceed six feet when the surface of the wall or partition behind such wainscoting shall be plastered flush

with the grounds and down to the floor line, thereby solidly filling the space between the wainscoting and the surface of the wall or partition with incombustible material.

Attics or Cock Lofts in Peaked Roofs.

To be made inaccessible for storage purposes.

No part of any attic or cock-loft below or within the trusses or rafters of a pitched roof of any building other than a dwelling house hereafter erected shall be so built as to provide an accessible place for the storage or placing therein of any article whatever. If any portion of the roof trusses, rafters or beams of a pitched roof is ceiled or plastered, or a ceiling is suspended therefrom, to form a ceiling for the uppermost story of a building, the space above such ceiling shall not be used for the storage or placing of any article whatever therein, and entrance to such space shall be made inaccessible. This, however, shall not prohibit a tightly inclosed vertical well-hole through such space to ascend to the scuttle door on the roof. In any existing building it is hereby declared unlawful to use or occupy the space above the ceiling and within the trusses or rafters of a pitched roof for the storage or placing of any article whatever therein, nor shall any stove-pipe or smoke flue other than a brick chimney pass through any attic or cock loft.

Space above suspended ceiling not to be used for storage.

Inclosed vertical space to reach scuttle door.

Storage prohibited within trusses of roof of existing building.

Hanging Ceilings.

Distance from underside of roof beams to underside of ceiling.

When any ceiling in any building hereafter erected is hung below the beams of a flat roof or roof having but a slight pitch, the distance from the underside of the roof beams at their highest grade to the underside of the hung ceiling shall not be greater than two feet.

SECTION 73.

Bay, Oriel and Show Windows.

Projection beyond building line.

Bay windows, oriel windows and show windows on the street front or side of any building may project not more than one foot beyond the building line—

Materials.

And shall be constructed of such incombustible materials and in such manner as will meet with the approval of the Commissioner of Buildings.

When of wood on dwelling houses.

Any such window that does not extend more than three feet above the second-story floor of any dwelling house may be built of wood covered with metal.

PART XII.

STAIRS AND ENTRANCES.

SECTION 74.

Entrance to Basement.

Outside of building.

Every dwelling house arranged for or occupied by two or more families above the first story, hereafter erected, shall be provided with an entrance to the basement thereof from the outside of such building.

SECTION 75.

Stairs, Number Regulated by Area of Building.

Description of building.

In any building hereafter erected to be used as an office building, store, factory, hotel, lodging house or school, covering a lot area—

Exceeding twenty-five hundred feet and not exceeding five thousand feet, there shall be provided at least two continuous lines of stairs remote from each other; Number, according to area.

And every such building shall have at least one continuous line of stairs for each five thousand feet of lot area covered, or part thereof, in excess of that required for five thousand feet of area. Proportionately increased number.

When any such building covers an area of lot greater than fifteen thousand feet the number of stairs shall be increased proportionately, or as will meet with the approval of the Commissioner of Buildings. When area exceeds 15,000 feet.

The width of the stairs required by this section shall in no case be less than three feet six inches in the clear between hand-rails or between the hand-rail and an inclosed side of the stairs, and shall be increased in width when in the opinion of the Commissioner of Buildings an increased width is necessary for the safety of the occupants, up to five feet. Width of stairs.

All such stairs shall have treads of uniform width and risers of uniform height throughout in each flight, and the risers shall be not more than eight inches in height and the treads, exclusive of nosings, not less than ten inches. Treads and risers.

Each flight of stairs in every story which exceeds a height of eleven feet in the clear shall have a proper landing introduced, and said landing shall be placed at the central portion thereof if the stairs be a straight run. Landings.

The stairs shall be provided with proper banisters or railings and hand-rails, and kept in good repair. Railings.

SECTION 76.

Engineers' Stationary Ladders.

Every building in which boilers or machinery are placed in the cellar or lowest story, shall have stationary As an outside exit.

iron ladders or stairs from such story leading direct to a manhole above on the sidewalk, or other outside exit.

SECTION 77.

Slate and Stone Treads of Stairs to be Supported.

In all buildings hereafter erected where the treads and landings of iron stairs are of slate, marble or other stone,

Supporting plates under treads.

They shall be each supported directly underneath, for their entire length and width, by a wrought iron or steel plate made solid or having openings not exceeding four inches square in same, of adequate strength and securely fastened to the strings.

When supporting plates are not required.

If stairs are constructed of other fireproof material than iron, and the slate, marble or other stone treads and landings are each solidly supported for their entire length and width by the materials composing such stairs, iron support plates shall not be required.

PART XIII.

SKYLIGHTS AND FLOOR-LIGHTS.

SECTION 78.

Metal Skylights.

Meaning of term.

The term "skylight" shall be taken to mean and include flat, hipped, lantern, monitor, turret, dome, vertical or pitched saw-tooth constructions, and all other covers placed over openings on roofs for the admission of light.

All skylights placed on or in any building, shall have the frames and sash thereof constructed of metal and glazed. Metal frames and sashes.

All openings in roofs for the admission of light other than elsewhere provided in this Code over elevator, stair, dumb-waiter shafts, and theatre stage roofs, shall have metal frames and sash, glazed with wired glass not less than one-quarter inch thick, or with glass protected above and below with wire screens, of not less than No. 12 galvanized wire, and not more than one-inch mesh. Wire glass or protected glass

Skylights for Fireproof Buildings.

Every fireproof roof hereafter placed on any building shall have, besides the usual scuttle or bulkhead, a skylight or skylights of a superficial area equal to not less than one-fiftieth the superficial area of such fireproof roof, the glass to be not less than one-half inch in thickness, or wired glass not less than one-quarter inch thick may be used, but these requirements shall not affect those prescribed elsewhere in this Code for the size of skylights over elevator, stair, and dumb-waiter shafts and over theatre stage roofs, nor for the size, thickness and kind of glass severally specified therefor. Proportional area. Glass, thickness of. Not to affect certain other requirements.

Skylights Over Public Passageways.

Skylights hereafter placed in buildings of a public character over any passageway or room of public resort, shall have immediately underneath the glass thereof a wire netting, unless wired glass is used. Wire netting or wired glass.

Floor-Lights.

All openings in floors for transmission of light to floors below shall be covered over with floor lights con- Construction for.

structed of metal frames and bars, the glass in no case to be less than three-quarters of an inch in thickness.

Wire netting or wired glass.

If any glass in same measures more than sixteen square inches, the glass shall be provided with strong wire netting under the same.

SECTION 79.

Unprotected Openings in Floors and Roofs.

Solid covering or inclosure.

No opening in any floor or roof shall be without a solid covering or an inclosure, as provided in this Code, to prevent the communication of fire from story to story, excepting as otherwise provided in this Code for certain staircase openings which are not required to be inclosed.

PART XIV.

INCLOSURE AND SHED COVERINGS FOR THE PROTECTION OF PEDESTRIANS—PROTECTION OF PERSONS EMPLOYED ON BUILDING.

SECTION 80.

Shed Coverings.

Shed over sidewalk when building exceeds 55 feet in height.

Whenever buildings shall be erected or increased to over fifty-five feet in height, upon or along any street, the owner, builder or contractor constructing or repairing such buildings, shall have erected and maintained during such construction or repair, a shed over the sidewalk in front of said premises, extending from building line to curb, the same to be properly, strongly and tightly constructed, so as to protect pedestrians and others using such streets.

Outside Scaffolds.

When building exceeds 85 feet in height.

Whenever outside scaffolds are required to carry on the construction of buildings over eighty-five feet in height, whether the same be constructed by poles or thrust-out scaffold, there shall be erected on its outer edge and ends an inclosure of wire netting of not over two-inch mesh, or of boards not less than three-fourths of an inch thick, placed not over one and one-half inches apart, well secured to uprights not less than two inches by four inches, fastened to planks or timbers, and resting on put-logs or thrust-outs. The said inclosure shall be carried up at least five feet in advance above the level on which the workmen employed on said front are working. The said thrust-outs shall be not less than three by ten of spruce or yellow pine, and to be doubled or tripled, as may be required for the load to be carried, and to be thoroughly braced and secured; or said timbers can be in one stick if proportioned to the load. The flooring on thrust-outs and put-logs shall be tightly constructed with plank. This said floor and inclosure shall not be removed until a like floor and inclosure is already prepared and in position on the story above.

Inclosure of wire netting or boards.

Inclosure to be higher than level on which work is progressing.

Flooring of scaffold.

When to be removed.

Window Openings Inclosed.

When building exceeds 85 feet in height.

In all buildings over eighty-five feet in height, during construction or alteration the windows on each floor above the second shall be properly inclosed as soon as the story is built.

Protection of Adjoining Skylights and Roofs.

If building is two or more stories higher than adjoining building.

If the walls of such buildings are carried up two stories or more above the roofs of adjoining buildings, proper means shall be provided and used for the protection of skylights and roofs of such adjoining buildings.

Wire netting.

The protection over skylights shall be of stout wire netting not over one-inch mesh on stout timbers and properly secured.

Sheds and Inclosures Subject to Inspection.

All such sheds and inclosures are to be subject to the inspection and approval of the Commissioner of Buildings.

When Adjoining Owner Refuses Permission to Protect Roofs and Skylights.

Refusal, effect of.

Should said adjoining owner, tenant or lessee refuse to grant permission to have said roofs and skylights so protected, such refusal by said owner, tenant or lessee shall relieve the owner of the building in course of construction from any responsibility for damage done to persons or property on or within the premises affected.

Commissioner of Buildings May Serve Notice.

Requiring work to be done.

Should such inclosure or protection not be so erected, the Commissioner of Buildings shall issue a notice to be served personally upon the owner, or authorized agent, constructing or repairing such buildings, or the owner, tenant or lessee of adjoining premises requiring such inclosure or protection, as provided in this Section, specifiying the manner in which same shall be erected.

Commissioner of Buildings Empowered to Erect Inclosures and Protection.

If notice is not complied with.

And if such inclosures or protections are not erected, strengthened or modified as provided in such notice within three days after the service thereof, the said

Commissioner of Buildings shall have full power and authority to cause such inclosure to be erected on the fronts and roofs and the sky-lights protected.

Expenses made a lien on property.

And all expenses connected with same may become a lien on the property in interest so inclosed and protected, and which lien may be created and enforced in the same manner as now provided for in Section 157 of this Code.

SECTION 81.

Protection of Persons Employed on Buildings.

Fireproof floor filling.

All contractors and owners, when constructing buildings where the floors or filling in between the floor beams thereof are of fireproof material or brickwork, shall complete the flooring or filling in as the building progresses, to not less than within three tiers of beams below that on which the iron work is being erected.

Wood floor beams boarded over.

If such buildings do not require filling in between the beams of floors with brick or other fireproof material, all contractors for carpenter work, or the owners of the buildings in the course of construction, shall lay the under flooring thereof on each story as the building progresses, to not less than within two stories below the one to which such building has been erected. When double floors are not to be used, such contractor, or the owner, shall keep planked over the floor two stories below the story where the work is being performed.

Iron or steel floor beams planked over.

If the floor beams are of iron or steel, the contractor for the iron or steel work of buildings in course of construction, or the owners of such buildings shall thoroughly plank over the entire tier of iron or steel beams on which the structural iron or steel work is being erected, except such spaces

as may be reasonably required for the proper construction of such iron or steel work, and for the raising or lowering of materials to be used in the construction of such buildings, or such spaces as may be designated by the plans and specifications for stairways and elevator shafts.

Hoisting apparatus to be fenced in.

If elevating machines or hoisting apparatus are used within a building in course of construction, for the purpose of lifting materials to be used in such construction, the contractors or owners shall cause the shafts or openings in each floor to be inclosed or fenced in on all sides by a substantial barrier, at least four feet in height.

PART XV.

MISCELLANEOUS BUILDINGS.

SECTION 82.

Grain Elevators and Coal Pockets.

Grain elevators.

Nothing in this Code shall be so construed as to apply to or prevent the erection of what are known as grain elevators, as usually constructed, provided they are erected in isolated localities and under such conditions as the Commissioner of Buildings may prescribe, including location.

Coal pockets.

Nor to apply to or prevent the erection of coal pockets or coal elevators as usually constructed under similar conditions, including location.

Ice Houses.

Location and construction.

Buildings to be used exclusively for the storage of ice may be erected in isolated localities and constructed of such materials and under such conditions as the Commissioner of Buildings may prescribe.

Pier Sheds.

On water front. Sheds or buildings on piers or wharves or on the water front shall be of iron or other incombustible materials, and in all cases shall be constructed in such manner and under such conditions as the Commissioner of Buildings may prescribe.

Construction.

SECTION 83.

Exhibition Buildings.

Construction. Buildings for fair and exhibition purposes, towers for observation purposes and structures for similar uses, whether temporary or permanent in character, shall be constructed in such manner and under such conditions as the Commissioner of Buildings may prescribe.

SECTION 84.

Smoke Houses.

Fireproof construction. All smoke houses shall be of fireproof construction, with brick walls, iron doors and brick or metal roof.

Guards and hanging rails. An iron guard shall be placed over and not less than three feet above the fire, and the hanging rails shall be of iron, and an iron grating shall be placed under the first row of hanging rails, and be not less than eight feet above the floor of the fire-pit.

Walls to be carried above roof. The walls of all smoke houses shall be built at least three feet higher than the roof of the building in which they are located, and shall be not less than twelve inches in thickness and be coped with stone or its equivalent.

PART XVI.

HEATING APPARATUS, DRYING ROOMS, GAS AND WATER PIPES.

SECTION 85.

Heating Furnaces and Boilers.

Placing of brick-set boilers.

A brick-set boiler shall not be placed on any wood or combustible floor or beams.

Portable boilers, flooring under.

Wood or combustible floors and beams under and not less than three feet in front and one foot on the sides of all portable boilers shall be protected by a brick foundation of three courses of brickwork, well laid in mortar on sheet iron; the middle course of brickwork to be laid crosswise, and with ventilating spaces within or between the bricks of said middle course; the said sheet iron shall extend at least twenty-four inches outside of the foundation at the sides and front. A cast-iron ash pan of suitable thickness shall be placed under the boiler, and shall have a flange, turned up in the front and on the sides, four inches high; said pan shall be in width not less than the base of the boiler, and shall extend at least two feet in front of it. If a boiler is supported on a cast-iron base with a bottom of the required thickness for an ash pan, and is placed on bearing lines of brick in the same manner as specified for an ash pan, then an ash pan shall be placed in front of the said base and shall not be required to extend under it.

Ash pan.

Base.

Protection of woodwork.

All lath and plaster and wood ceilings and beams, over and to a distance of not less than four feet in front of all boilers, shall be shielded with metal. Where smooth ceilings are to be protected, the metal to be

applied shall leave an air space of not less than one-quarter of an inch between the metal and ceiling. Where beams are exposed, the metal to be applied shall follow the contour of the beams. The distance from the top of the boiler to said shield shall be not less than twelve inches, and the smoke-pipe leading therefrom shall be not less than twenty-four inches.

Distances from combustible partitions.

No combustible partition shall be within four feet of the sides and back and six feet from the front of any boiler, unless said partition shall be covered with metal to the height of at least three feet above the floor, and shall extend from the end or back of the boiler to at least five feet in front of it; then the distance shall be not less than two feet from the sides and five feet from the front of the boiler.

Covers, how constructed.

All brick hot-air furnaces shall have two covers, with an air space of at least four inches between them; the inner cover of the hot-air chamber shall be either a brick arch or two courses of brick laid on galvanized iron or tin, supported on iron bars; the outside cover, which is the top of the furnace, shall be made of brick or metal supported on iron bars, and so constructed as to be perfectly tight, and shall be not less than twelve inches below any combustible ceiling or floor beams.

Walls of furnaces, how built.

The walls of the furnace shall be built hollow in the following manner: One inner and one outer wall, each four inches in thickness, properly bonded together with an air space of not less than three inches between them.

Distances from woodwork.

Furnaces shall be built at least twelve inches from all woodwork.

Cold air boxes, material for.

The cold air boxes of all hot air furnaces shall be made of metal, brick or other incombustible material.

Distances from woodwork for portable furnaces.

All portable hot air furnaces shall be placed at least two feet from any wood or combustible partition or ceiling, unless the partitions and ceilings are properly

protected by a suspended metal shield, when the distance shall be not less than one foot.

Wood floors under portable furnaces to be protected.

Wood floors under all portable furnaces shall be protected by three courses of brickwork, well laid in mortar on galvanized sheet iron, the middle course to be laid crosswise, and with ventilating spaces within or between the bricks of said middle course. Said brickwork shall extend at least two feet beyond the furnace in front of the ash pan.

SECTION 86.

Registers.

When located over a furnace.

Registers located over a brick furnace shall be supported by a brick shaft built up from the cover of the hot-air chamber; said shaft shall be lined with a metal pipe, and all wood beams shall be trimmed away not less than four inches from it.

When placed on woodwork.

Where a register is placed on any woodwork in connection with a metal pipe or duct, the end of the said pipe or duct shall be flanged over on the woodwork under it.

Borders.

All registers for hot air furnaces placed in any woodwork or combustible floors shall have stone or iron borders firmly set in plaster of paris or gauged mortar.

Register boxes.

All register boxes shall be made of tin plate or galvanized iron with a flange on the top to fit the groove in the frame, the register to rest upon the same; there shall be an open space of two inches on all sides of the register box, extending from the under side of the border to and through the ceiling below. The said opening shall be fitted with a tight tin or galvanized iron casing, the upper end of which shall be turned under the frame.

When a register box is placed in the floor over a portable furnace, the open space on all sides of the register box shall be not less than three inches. Register box in floor over portable furnace.

When only one register is connected with a furnace said register shall have no valve or slats, and where two or more registers are connected with a furnace, at least one of them shall have no valve or slats. When register to have valve.

SECTION 87.

Drying Rooms.

All walls, ceilings and partitions inclosing drying rooms shall be made of fireproof material. Fireproof dry-rooms.

SECTION 88.

Ranges and Stoves.

Where a kitchen range is placed from twelve to six inches from a wood stud partition, the said partition shall be shielded with metal from the floor to the height of not less than three feet higher than the range; if the range is within six inches of the partition, then the studs shall be cut away and framed three feet higher and one foot wider than the range, and filled in to the face of the said stud partition with brick or fireproof blocks, and plastered thereon. Kitchen range near stud partition.

All ranges on wood or combustible floors and beams that are not supported on legs and have ash pans three inches or more above their base, shall be set on suitable brick foundations, consisting of not less than two Ranges on wood floors.

courses of brick well laid in mortar on galvanized sheet iron, except small ranges, such as are used in apartment houses, that have ash pans three inches or more above their base, shall be placed on at least one course of brickwork on galvanized sheet iron.

Range against furred wall forbidden.

No range shall be placed against a furred wall.

Metal hoods over large ranges.

All lath and plaster or wood ceilings over all large ranges and ranges in hotels and restaurants, shall be guarded by metal hoods placed at least nine inches below the ceiling.

Ventilating pipe for hood over range.

A ventilating pipe connected with a hood over a range shall be an individual pipe, having no connection with any other pipe, and shall be covered with one inch of asbestos on wire mesh and shall not be less than nine inches from wood or lath and plaster work which shall be shielded with metal. The pipe shall go either outside of the building and discharge at least four feet above the roof, or be connected with a suitable brick flue lined with burnt clay or heavy iron pipe, which shall be used exclusively for the ventilating pipe of the range.

Laundry stoves on wood floors.

Laundry stoves on wood or combustible floors shall have a course of bricks, laid on metal, on the floor under and extended twenty-four inches on all sides of them.

Stoves for heating.

Distance from combustible wood.

All stoves for heating purposes shall be properly supported on iron legs resting on the floor three feet from all lath and plaster or woodwork; if the lath and plaster or woodwork is properly protected by a metal shield, then the distance shall be not less than eighteen inches.

Metal under stove on wood floor.

A metal shield shall be placed under and twelve inches in front of the ash pan of all stoves that are placed on wood floors.

All low gas stoves shall be placed on iron stands, or the burners shall be at least six inches above the base of the stoves, and metal guard plates placed four inches below the burners, and all woodwork under them shall be covered with metal. Gas connections to such stoves shall be made by metal pipes, unless there is no valve on the gas stove. Gas stoves.

All receptacles for ashes shall be of galvanized iron, brick or other incombustible material. Ash receptacles.

SECTION 89.

Notice as to Heating Apparatus.

In cases where hot water, steam, hot air or other heating appliances or furnaces are hereafter placed in any building, or flues or fireplaces are changed or enlarged, due notice shall first be given to the Department of Buildings by the person or persons placing the said furnace or furnaces in said building, or by the contractor or superintendent of said work. By contractor or person installing.

SECTION 90.

Gas and Water Pipes.

Every building, other than a private dwelling house, hereafter erected, and all factories, hotels, churches, theaters, schoolhouses and other buildings of a public character now erected in which gas or steam is used for lighting or heating, shall have the supply pipes leading from the street mains provided each with a stop-cock To have stop-cock on sidewalk.

placed in the sidewalk at or near the curb, and so arranged as to allow of shutting off at that point.

When pipe is let into wood beams.

No gas, water or other pipes which may be introduced into any building shall be let into wood beams unless the same be placed within thirty-six inches of the end of the beams;

Limiting depth for cutting into beams.

And in no building shall the said pipes be let into any beam more than two inches of its depth.

Rules and Regulations for Installation of Gas Pipes and Electric Wiring.

Gas company's rules.

The installation of all gas pipes in any building or structure in the city of....., shall be in accordance with the rules and regulations prescribed by the ..... gas company, and the said rules and regulations are hereby made a part of the requirements of this Code.

Gas pipes to be tested.

Certificate.

All gas pipes shall be inspected and tested by the gas company before the floors are laid, and a certificate of the same from the gas company shall be placed on file in the Department of Buildings by the owner of the building or his representative. The installation of the gas pipes shall be subject to the approval of the Commissioner of Buildings.

Gas Brackets.

Distance from woodwork.

All gas brackets shall be placed at least three feet below any ceiling or woodwork, unless the same is properly protected by a shield; in which case the distance shall be not less than eighteen inches.

Swinging brackets.

No swinging or folding gas bracket shall be placed against or near any stud partition or woodwork, and all swinging gas brackets shall be provided with stops to prevent them from swinging against woodwork.

Brackets on woodwork.

No gas bracket on any lath and plaster partition or woodwork shall be less than five inches in length, meas-

ured from the burner to the plaster surface or woodwork.

Gaslights placed near window curtains or any other combustible material shall be guarded by globes or wire cages. Gaslights near curtains.

Electrical Work.

No electrical wiring or installation of electrical apparatus or appliances for furnishing light, heat and power shall be introduced into or placed in any building or structure in the city of ....., except in compliance with the rules and regulations of the National Board of Fire Underwriters, known as the "National Electrical Code," and the said rules and regulations are hereby made a part of the requirements of this Code. The installation of all such electrical work shall be subject to the approval of the Commissioner of Buildings. Fire underwriters' rules. Subject to approval.

PART XVII.

ROOFS, LEADERS, CORNICES, BULKHEADS, SCUTTLES AND TANKS.

SECTION 91.

Mansard Roofs.

If a mansard or other roof of like character, having a pitch of over sixty degrees, be placed on any building, except a wood building, or a dwelling house not exceeding three stories nor more than forty feet in height, it shall be constructed of iron rafters and lathed with iron or steel on the inside and plastered, or filled in with fireproof material not less than three inches thick, and covered with metal, slate or tile. How constructed.

False mansard or similar roof.

No false mansard or other similar roof construction for increasing the apparent height of a building, but having no full story behind the same, shall be placed on any building to a greater height than five feet above the cornice or the highest point of the roof beams.

SECTION 92.

Cornices and Gutters.

Within the fire limits.

On all buildings hereafter erected within the fire limits, the exterior cornices, inclusive of those on show windows, and gutters shall be of some fireproof material.

Material.

Secured with anchors.

All fireproof cornices shall be well secured to the walls with iron anchors, independent of any woodwork.

Height for cornice above roof beams.

No cornice, not including pediments, shall extend more than five feet above the highest point of the roof beams of any building.

Walls in Relation to Roof Planking and Cornices.

In all cases the walls shall be carried up to the planking of the roof.

When cornice projects above roof.

Where the cornice projects above the roof the walls shall be carried up to the top of the cornice.

Party walls to extend above planking of cornice.

The party walls shall in all cases extend above the planking of the cornice and be coped.

Unsafe Cornices.

To be removed.

All exterior wood cornices within the fire limits that may now be or that may hereafter become unsafe or rotten shall be taken down,

If replaced.

And if replaced, shall be constructed of some fireproof material.

Cornices Damaged by Fire.

All exterior cornices of wood or gutters within the fire limits that may hereafter be damaged by fire to the extent of one-half shall be taken down, and if replaced shall be constructed of some fireproof material; Removed if one-half damaged.

But if not damaged to the extent of one-half, the same may be repaired with the same kind of material of which they were originally constructed. Repaired if damaged less than one-half.

SECTION 93.

Bulkheads on Roofs and Scuttles.

Bulkheads used as inclosures for tanks and elevators, and coverings for the machinery of elevators and all other bulkheads, including the bulkheads of dwelling houses, on buildings not more than four stories in height hereafter erected or altered, may be constructed of hollow fireproof blocks; or of wood, covered with not less than two inches of fireproof material, or filled in the thickness of the studding with such material, and covered on all outside surfaces with metal, including both surfaces and edges of doors. On fireproof buildings the bulkheads and inclosures on roofs shall be constructed of fireproof materials only. Inclosures on roofs. How constructed. On fireproof buildings.

All buildings shall have scuttles or bulkheads, with ladders or stairs leading thereto, and easily accessible to all occupants. Scuttles, bulkheads, ladders or stairs.

No scuttle shall be less in size than two by three feet. Size for scuttles.

No staging or stand shall be constructed or occupied upon the roof of any building without first obtaining the approval of the Commissioner of Buildings. Prohibiting staging on roof, except by permit.

SECTION 94.

Tanks.

Contents.

Tanks containing more than five hundred gallons of water or other fluid hereafter placed in any story, or on the roof or above the roof of any building now or here-

Supports.

after erected, shall be supported on iron or steel beams of sufficient strength to safely carry the same;

Bearings for beams.

And the beams shall rest at both their ends on brick walls or on iron or steel girders or iron or steel columns or piers of masonry.

Discharge pipe.

Underneath any said water tank or on the side near the bottom of the same, there shall be a short pipe or outlet, not less than four inches in diameter, fitted with a suitable valve having a lever or wheel handle to same, to discharge the weight of the fluid contents from the tank, in case of necessity, unless tank water is to supply automatic sprinklers.

Location for tanks.

Such tanks shall be placed where practicable at one corner of a building, and shall not be placed over nor near a line of stairs, unless the stairs are inclosed with brick walls of sufficient strength to support the added load of the tank and contents.

Covers, if of wood.

Covers on top of water tanks placed on roofs, if of wood shall be covered with tin.

SECTION 95.

Roofing and Leaders Within the Fire Limits.

Roof planking.

The planking and sheathing of the roofs of buildings shall not in any case be extended across the side or party wall thereof.

Materials for roofing.

Every building and the tops and sides of every dormer-window thereon shall be covered and roofed with brick, tile, slate, tin, copper or iron. Or plastic slate, asphalt, slag, or gravel may be used, provided such roofing shall be composed of not less than five layers of roofing felt, cemented together and finished with not less than ten gallons of coal tar, pitch or asphalt to each one hundred square feet of roof, or such other quality of fireproof roofing as the Commissioner of Buildings, under his certificate, may authorize,

Dormer windows.

And the outside of the frames of every dormer-window hereafter placed upon any building shall be made of some fireproof material.

Roof covering for frame buildings within fire limits.

No wood building within the fire limits more than two stories or above twenty feet in height above the curb level to the highest part thereof, which shall require roofing, shall be roofed with any other roofing or covered except as aforesaid.

Shingle roofs, repairing of.

Nothing in this Section shall be construed to prohibit the repairing of any shingle roof, provided the building is not altered in height.

Leaders from Roofs.

To protect walls and foundations.

All buildings shall be kept provided with proper metallic leaders for conducting water from the roofs in such manner as shall protect the walls and foundations of said buildings from injury.

Leaders not to discharge on sidewalks.

In no case shall the water from the said leaders be allowed to flow upon the sidewalk, but the same shall be conducted by pipe or pipes to the sewer.

When no sewer in street.

If there be no sewer in the street upon which such buildings front, then the water from said leader shall be conducted by proper pipe or pipes, below the surface of the sidewalk to the street gutter.

PART XVIII.

ELEVATORS, HOISTWAYS AND DUMB-WAITERS.—STAIR HALL INCLOSURES.

SECTION 96.

Elevators and Hoistways.

When not inclosed.

In any building in which there exists any hoistway or freight elevator or wellhole not inclosed in walls constructed of brick or other fireproof material and provided with fireproof doors, the openings thereof through and upon each floor of said buildings, shall be provided with and protected by a substantial guard or gate, and with good and sufficient automatic trap-doors, properly counterweighted, covered with tin on the underside and edges, in accordance with standard for fire-doors, and so constructed as to form a substantial floor surface when closed. The guards or gates and railings shall be of such material and form of construction as may be approved by the Commissioner of Buildings.

Guards or gates.

Trap-doors.

Materials.

Gates and trap-doors to be kept closed.

Such guards or gates shall be kept closed at all times, except when in actual use, and the trap-doors shall be closed at the close of the business of each day by the occupant or occupants of the building having the use or control of the same.

SECTION 97.

Elevator Inclosures.

How constructed.

All elevators hereafter placed in any building shall be inclosed in suitable walls of brick, or with a suitable framework of iron and burnt clay filling, or with such

other fireproof material and form of construction as in the opinion of the Commissioner of Buildings may be equally as good,

In non-fireproof warehouses, stores and factories, exceeding three stories in height.

Except that the inclosure walls in non-fireproof buildings exceeding three stories in height and used as warehouses, stores or factories, shall be of solid brickwork.

Thickness for brick inclosure walls.

If the inclosure walls are of brick, laid in cement mortar, and not used as bearing walls, they may be eight inches in thickness for not more than fifty feet of their uppermost height, and increasing in thickness four inches for the remaining lower portion or part thereof.

Thickness for iron and burnt clay inclosures.

In fireproof buildings, when the construction of the elevator inclosure is of iron framework and burnt clay filling or other approved materials the said construction shall be not less than six inches in thickness.

Walls carried above roof.

Said walls or construction shall in all cases extend through and at least three feet above the roof.

Doors.

All door openings in any said inclosures shall be provided with standard fire-doors made solid for their full height and hung to rabbeted wrought-iron or steel frames or to wrought-iron eyes built into the wall, and shall have iron, stone or cement concrete doorsills of the full width and length of the openings. In buildings other than stores, warehouses, and factories, lights of wired glass, in approved metal frames, may be placed in such doors, but no one pane shall exceed twenty-four by thirty inches in size in either direction.

Glass panels in doors.

Windows.

In all buildings other than stores, warehouses and factories, all window openings in any said inclosing walls or construction opening from the shaft to within the building shall have standard window frames and fixed sash of metal, and the sash shall be glazed with wire glass, no pane of which shall exceed twenty-four

Glazing.

by thirty inches in size, in either direction, between dividing bars.

Doors in elevator shafts of private dwellings.

The doors used for openings in dwelling houses intended for the occupancy of one family may be of wood covered on the inner surface and edges with metal, not including the openings in the cellar, nor above the roof in any such shaft walls, which latter doors shall be entirely covered with metal.

Skylights Over Elevator Inclosures.

Roofs and skylights over inclosed elevator shafts.

The roofs over all inclosed elevators shall be made of fireproof materials, with a skylight at least three-fourths the area of the shaft, the glass to be not more than one-eighth of an inch thick and covered above and below with strong wire netting, but wired glass shall not be used in skylights over elevator inclosures.

Bottom of Elevator Shafts.

When shaft does not extend to ground.

When the shaft does not extend to the bottom of the cellar or lowest story, the lower end shall be inclosed in fireproof material.

Inclosing Elevator-Operating Machinery.

Similar to shaft.

When the inclosure of an elevator has an opening to accommodate machinery for operating same, such as shafts, pulleys, drums, cables, etc., said machinery shall be inclosed in a similar manner to the shaft.

Sidewalk Elevators.

To be inclosed.

Elevators or lifts from the floor of the lowest story to the sidewalk shall be inclosed in said story or stories with fireproof materials and door openings in same to be protected by standard fire-doors.

The door at the sidewalk level of the said elevator or lift shall be of wrought iron or steel.

SECTION 98.

Dumb-Waiter Shafts.

All dumb-waiter shafts, other than those which do not extend more than three stories above the cellar or basement in private dwelling houses, shall be inclosed in suitable walls of brick or with burnt clay blocks, set in iron frames of proper strength, How constructed.

Or such other fireproof material and form of construction as in the opinion of the Commissioner of Buildings may be equally as good. Other fireproof methods.

Said walls or construction shall extend at least three feet above the roof, Wall carried above roof.

Skylights Over Dumb-Waiter Shafts.

And be roofed over with fireproof materials and with a skylight at least three-fourths the area of the shaft, made with metal frames and glazed with glass not more than one-eighth of an inch thick and covered above and below with strong wire netting, but wired glass shall not be used in skylights over dumb-waiter inclosures. Size. Glass.

Doors in Dumb-Waiter Shafts.

A dumb-waiter shall be considered a special form of elevator whose dimensions shall not exceed three feet square and four feet in height, and which is designed for the carrying of light articles, and is provided with one or more shelves. Definition.

All openings in the inclosure walls or construction shall be provided with self-closing fireproof doors. Doors.

Brick wall inclosure in cellar.

When the dumb-waiter is carried through the cellar or lowest story of any building it shall be inclosed in that story with brick walls not less than eight inches thick.

Bottom and Top of Dumb-Waiter Shafts.

When shaft does not extend to ground.

When the shaft does not extend to the floor level of the cellar or lowest story, the bottom of the shaft shall be constructed of fireproof material.

When shaft does not extend to roof.

When the shaft does not extend through the top story and does not extend through more than three stories, the top of the shaft shall be also constructed of fireproof material.

When mandatory to carry shaft above roof.

When the shaft extends through more than three stories it shall be carried above the roof, as before provided.

SECTION 99.

Elevators in Existing Hotels.

Non-fireproof hotels to inclose elevators.

In every non-fireproof building, used or occupied as a hotel, in which there is an elevator not inclosed in a fireproof shaft, such elevators shall be inclosed in suitable walls, constructed and arranged as in this Code required for elevator shafts.

SECTION 100.

Screen Under Elevator Sheaves.

Iron gratings under machinery at top of elevator shafts.

Immediately under the sheaves at the top of every elevator shaft in any building there shall be provided and placed a substantial grating or screen of iron or steel, of such construction as shall be approved by the Commissioner of Buildings.

SECTION 101.

Inspection, Installation, Alteration and Operation of Elevators.

Periodical. The Commissioner of Buildings shall cause an inspection of elevators carrying passengers or employes to be made at least once every three months,

Regulations to be made. And shall make regulations for the inspection, installation, alteration and operation of such elevators, and shall also make regulations for the installation, alteration and operation of freight elevators with a view to safety;

Qualifications for conductors And shall also prescribe suitable qualifications for persons who are placed in charge of the running of passenger or freight elevators.

Necessary repairs to be made. The regulations shall require any repairs found necessary to any such passenger or employes' elevators to be made without delay by the owner or lessee.

If defective, not to be used. In case defects are found to exist which endanger life or limb by the continued use of such elevator, then, upon notice from the Commissioner of Buildings, the use of such elevator shall cease, and it shall not again be used until a certificate shall be first obtained from said Commissioner that such elevator has been made safe.

Certificate.

Incompetent persons not to run elevators. No person shall employ or permit any person to be in charge of running any passenger elevator who does not possess the qualifications prescribed therefor.

No person shall run any passenger or freight elevator in the City of ..... unless he shall first register at the office of the Department of Buildings his name and residence and also the location of the building in which he is to perform such service, and shall first receive from the Commissioner of Buildings a certificate as to his competency.

SECTION 102.

Stair Hallway Inclosures.

Material for inclosure.

In all stores, warehouses and factories the staircase halls shall be inclosed with suitable walls of brick, or with burnt clay blocks set in iron frames, or such other fireproof materials and forms of construction as may be approved by the Commissioner of Buildings, except that the inclosure walls in such buildings exceeding three stories in height shall be of brick. Said walls or construction shall be continuous and extend at least three feet above the roof. The roof over the stair hall inclosure shall be covered with a metal and glass skylight at least three-eighths of the area of the inclosure, and constructed and glazed as required for skylights over elevator inclosures. All door openings in such stair hall inclosures shall be provided with self-closing fireproof doors and frames, and all window openings shall have window frames of metal, and the window sash shall be fixed sash of metal and glazed with wired glass, but no one pane shall exceed twenty-four by thirty inches in size. At least one of such inclosed stair halls in each of said buildings shall have a like connecting inclosure hallway in the first story and extend to the street, and all door or window openings in the same shall be provided with doors and windows as provided for openings in the stair hall inclosures.

Extend through roof.

Skylight.

Doors.

Windows.

Connecting hall in first story.

Escalators.

Escalators, or endless or revolving stairs, shall be deemed stairs and comply with all the requirements contained in this Section for the inclosure of stairs.

Hotel stairway inclosure.

Any hotel building having an area requiring more than one stairway, as provided in Section 75 of this Code, shall have at least one such continuous stairway inclosed in the manner described in this Section.

PART XIX.

FIRE APPLIANCES, FIRE ESCAPES AND FIREPROOF SHUTTERS AND DOORS.

SECTION 103.

Standpipes.

Size of standpipes.

In every existing building exceeding fifty-five and not over one hundred feet in height, unless already provided with a three-inch or larger standpipe, and in all buildings hereafter erected exceeding fifty-five and not exceeding one hundred feet in height, there shall be provided a vertical standpipe of not less than four inches in diameter.

Buildings over one hundred feet in height

In every existing building exceeding one hundred feet in height, unless already provided with a four-inch or larger standpipe, and in all buildings hereafter erected exceeding one hundred feet in height, there shall be provided a vertical standpipe of not less than six inches in diameter.

Material.

These standpipes shall be of wrought iron or steel galvanized, and, together with fittings and connections, shall be of such strength as to safely withstand at least three hundred pounds water pressure to the square inch when installed and ready for service; also to stand such a test without leaking at joints, valves or fittings.

Location. Standpipes shall be located within fireproof stairway inclosures where the latter are of such construction, and as near stairways as possible where they are not so inclosed.

Number of standpipes. In buildings exceeding on hundred feet deep fronting on two or more streets there shall be a standpipe at each end of building, and in large area buildings there shall be one standpipe at each stairway, or within each stairway inclosure.

Connection at bases. Where more than one standpipe is required in a building they shall be connected at their bases by pipes of size equal to that of largest standpipes, so that water from any source will supply all the standpipes.

Arrangement of pipe and connections. Standpipes shall extend from the cellar to and through the roof, with a hose connection located from four to six feet above floor level fitted with approved straightway composition gate valve in each story, including cellar, and a hose connection provided above the roof with the valve controlling latter, located in the standpipe under the roof and arranged to be operated both from above and below the roof. A suitable three-quarter-inch drain pipe and valve shall be provided under the roof for each roof connection.

Hose. Hose sufficient to reach to all parts of the floor shall be attached to each outlet in the building, and hose for roof-hydrant may be placed on rack in top floor near the scuttle leading to the roof. Hose shall be two and one-half or two and five-eighths inches in diameter, in fifty-foot lengths, and provided with standard couplings at each end, all couplings to be of same hose thread as that in use by the local Fire Department.

Kind of hose. Hose to be approved linen, cotton rubber lined or rubber made under specifications recommended by the National Board of Fire Underwriters.

Each line of hose shall be provided with washers at both ends, and be fitted with play pipe or nozzle of Underwriter pattern, having handles at the base and with discharge outlet not less than three-quarter inch in diameter. One spanner to be located at each hose connection throughout the building. Hose fittings.

All standpipes shall be provided with a Siamese steamer connection, located on the outside of the building about one foot above the curb level, and where a building fronts on two or more streets, a connection to be provided on each street front. Inlet pipe from steamer connection to standpipe to be not less than the diameter of the largest standpipe. The thread on the Siamese connection shall be uniform with that used by the local Fire Department. Siamese steamer connections shall be provided with check valves in the "Y," and substantial caps provided to protect thread on the connection. The steamer connection fitting should be adjusted looking down at an angle of forty-five degrees. A suitable iron plate with raised letters shall be secured to the wall near steamer connection, reading—"To Standpipes." Siamese connections.

In each connecting pipe just inside of the building, in a horizontal section shall be placed a straightway check valve, but not a gate valve. A drip pipe with valve to same, shall be placed between said check valve and steamer connection to properly drain this section to prevent freezing. Check valves. Drip pipe.

In addition to the provision made for steamer connections to standpipes, the water supply may be from city water where pressure is sufficient, automatic fire-pump of five hundred gallons or more capacity per minute, elevated tank or steel pressure tank of not less than five thousand gallons capacity. Water supplies.

In all buildings coming under these regulations as Automatic supply for certain buildings.

to height which are occupied for living or sleeping purposes, such as hotels, lodging houses, hospitals and asylums, the standpipe system must have at least one of the approved automatic supplies before described.

Check valve under tank.

Where a standpipe is connected to a tank there shall be a straightway check valve in a horizontal section of pipe between the first hose outlet in connecting pipe and tank, and said tank must be filled by a separate pipe, and not through the standpipe.

Location of pumps and boilers.

Where pumps constituting a supply to standpipes are located in the lowest story of a building, they shall be placed not less than two feet above the floor level, and boilers upon which pumps depend for steam shall be arranged so that flooding of fires under same will be impossible.

Elevator.

In every building exceeding one hundred feet in height, at least one passenger elevator shall be kept in readiness for immediate use by the Fire Department during all hours of the night and day, including holidays and Sundays.

Auxiliary Fire Appliances.

Kind and design.

All existing buildings, and those hereafter erected exceeding one hundred feet in height, shall be provided with auxiliary fire apparatus and appliances, such as wrenches, spanners, fire extinguishers, hooks, axes and pails, as may be required by the Commissioner of the Fire Department; all of said apparatus to conform in design to those in use by the local Fire Department.

Sprinkler Pipes in Basements and Cellars of Mercantile and Manufacturing Buildings.

Where required.

In such buildings as are used or occupied for mercantile and manufacturing purposes there shall be

provided in addition to said standpipe or standpipes, an approved system of automatic sprinklers placed at the ceiling of each story below the first or grade floor and extending to the full depth and breadth of the building.

Pipe sizes.

The pipe sizes and spacing of heads for said sprinkler system shall conform to the schedule and rules recommended by the National Board of Fire Underwriters, which are hereby made a part of the requirements of this Code.

Siamese connection.

Said sprinkler pipes shall be connected with a pipe of not less than four inches in diameter leading to the outside of building and there provided with an approved Siamese steamer connection, latter to be installed under requirements set forth in this Section, and to be under the control and for the use of the Fire Department.

Direction plate.

A suitable iron plate with raised letters shall be securely attached to the wall near said steamer connection, reading—"Cellar Sprinklers."

SECTION 104.

Fire-Escapes.

Apartment houses and tenement houses.

Every apartment house, tenement house or dwelling house occupied by or built to be occupied by three or more families,

Hotels, lodging houses, boarding houses.

And every building already erected, or that may hereafter be erected, more than three stories in height, occupied and used as a hotel, apartment-hotel or lodging house, and every boarding house, having more than fifteen sleeping rooms above the basement story,

Factories, hospitals, asylums.

And every factory, mill, manufactory or workshop, hospital, asylum or institution for the care or treatment of individuals,

Three-story stores and workshops.

And every building three stories and over in height used or occupied as a store or workroom,

Schools, assembly places.

And every building in whole or in part occupied or used as a school or place of instruction or assembly,

Officebuildings.

And every office building four stories or more in height,

As directed.

Shall be provided with such good and sufficient fire-escapes, stairways, or other means of egress in case of fire as shall be directed by the Commissioner of Buildings.

To be kept in good condition.

The owner or owners of any building upon which a fire-escape is erected shall keep the same in good repair and properly painted.

To consist of.

Fire-escapes on the outside of buildings shall consist of open iron balconies and stairways.

Projection into street.

Fire-escapes may project into the public highway to a distance not greater than four feet beyond the building line.

Angle for stairs.

The stairways shall be placed at an angle of not more than sixty degrees, with steps not less than six inches in width and twenty inches in length, and with a rise of not more than nine inches.

Goose-neck ladders.

The balcony on the top floor, except in case of a front fire-escape, shall be provided with a goose-neck ladder leading from said balcony to and above the roof.

Balconies.

Width for balconies.

The balconies shall be not less than three feet in width, and placed where directed by the Commissioner of Buildings, at each story above the ground floor.

Height from window sill.

They shall be below and not more than one foot below the window sills and extend in front of and not less than nine inches beyond each window.

Landings.

There shall be a landing not less than twenty-four inches square at the head and foot of each stairway.

The stairway opening on each platform shall be of a size sufficient to provide clear headway. Stair openings.

Floors of Balconies.

The floors of balconies shall be of wrought iron or steel slats not less than one and a half inches by three-eighths of an inch, placed not more than one and one-quarter inches apart, and well secured and riveted to iron battens one and a half inches by three-eighths of an inch, not over three feet apart and riveted at the intersections. The openings for stairways in all balconies shall be not less than twenty-one inches wide and thirty-six inches long, and such openings shall have no covers of any kind. Floor slats. Size of stair openings.

The platforms or balconies shall be constructed and erected to safely sustain in all their parts a safe load at a ratio of four to one, of not less than eighty pounds per square foot of surface. Strength of balconies.

Railings.

The outside top rail shall extend around the entire length of the platform and in all cases shall go through the wall at each end, and be properly secured by nuts and four-inch square washers at least three-eighths of an inch thick, and no top rail shall be connected at angles by cast iron. The top rail of balconies shall be one and three-quarters inches by one-half inch of wrought iron, or one and a half inch angle iron one-quarter inch thick. The bottom rails shall be one and one-half inches by three-eighths of an inch wrought iron or steel, or one and a half inch angle iron, one-quarter inch thick, well leaded into the wall. The standards or filling-in bars shall be not less than one-half inch round or square wrought iron or steel, well Top rails. Bottom rails. Filling-in bars.

riveted to the top and bottom rails and platform frame. Such standards or filling-in bars shall be securely braced by outside brackets at suitable intervals, and shall be placed not more than six inches from centres; the height of railings shall in no case be less than two feet nine inches.

Braces.

Height for railings.

Stairways.

The stairways shall be constructed and erected to fully sustain in all their parts a safe load at a ratio of four to one of not less than one hundred pounds per step, with the exception of the tread which must safely sustain at said ratio a load of two hundred pounds. The treads shall be flat open treads not less than six inches wide and with a rise of not more than nine inches. The stairs shall be not less than twenty inches wide. The strings shall be not less than three-inch channels of iron or steel, or other shape equally strong, and shall rest upon and be fastened to a bracket, which shall be fastened through the wall as hereinafter provided. The strings shall be securely fastened to the balcony at the top, and the steps in all cases shall be double-riveted or bolted to the strings. The stairs shall have three-quarter inch handrails of wrought iron, well braced.

Bearing strength for stairs.

Treads.

Width for stairs.

Strings.

Handrails.

Brackets.

The brackets shall be not less than one-half inch by one and three-quarter inches wrought iron placed edgewise, or one and three-quarter inch angle iron, one-quarter inch thick, well braced; they shall be not more than four feet apart, and shall be braced by means of not less than three-quarters of an inch square wrought iron, and shall extend two-thirds of the width of the respective balconies or brackets. The brackets shall go through the wall and be turned down three inches, or

Size of brackets.

Distance apart.

How secured.

be properly secured by nuts and four-inch square washers at least three-eighths of an inch thick.

On new buildings the brackets shall be set as the walls are being built. Build in brackets.

When brackets are put on buildings already erected the part going through the wall shall be not less than one inch in diameter with screw nuts and washers not less than five inches square and one-half an inch thick. Brackets for existing buildings.

Drop-Ladders.

A proper drop ladder shall be required from the lower balcony when the floor of such balcony is more than fourteen feet above the sidewalk or ground. From lower balcony.

Painting.

All the parts of such fire-escapes shall receive not less than two coats of paint, one in the shop and one after erection. Two coats of paint.

Incumbrances on Fire-Escapes.

No person shall at any time place any incumbrances of any kind whatsoever before or upon any fire-escape, balcony or stairway. Prohibiting incumbrances.

It shall be the duty of every fireman and policeman who shall discover any fire-escape balcony or stairway of any fire-escape incumbered in any way, to forthwith report the same to the commanding officer of his company or precinct, and such commanding officer shall forthwith cause the occupant of the premises or apartment to which said fire-escape balcony or stairway is attached or for whose use the same is provided, to be notified, either verbally or in writing, to remove such incumbrances and keep the same clear. To report incumbrances on fire-escapes.

If said notice shall not be complied with by the removal, forthwith, of such incumbrances, and keeping Ordering the removal of incumbrances.

said fire-escape, balcony or stairway free from incumbrance, then it shall be the duty of said commanding officers to apply to the nearest police magistrate for a warrant for the arrest of the occupant or occupants of the said premises or apartment of which the fire-escape forms a part, and the said parties shall be brought before the said magistrate, as for a misdemeanor; and, on conviction, the occupant or occupants of said premises or apartment shall be fined not more than ten dollars for each offense, or may be imprisoned not to exceed ten days, or both, in the discretion of the court.

Penalty for disobeying order to remove incumbrances.

Notice Plates on Fire-Escape Balconies.

In constructing all balcony fire-escapes, the manufacturer thereof shall securely fasten thereto, in a conspicuous place, a cast-iron plate having suitable raised letters on the same, to read as follows: *Notice! Any person placing any incumbrance on this balcony is liable to a penalty of ten dollars and imprisonment for ten days.*

Plate stating penalty.

Scuttle Ladders.

Stationary.

All buildings requiring fire-escapes shall have stationary iron ladders leading to the scuttle opening in the roof thereof, and all scuttles and ladders shall be kept so as to be ready for use at all times.

Bulkhead Stairs and Doors.

Stairs.

If a bulkhead is used in place of a scuttle, it shall have stairs with sufficient guard or hand-rail leading to the roof.

Scuttle door or bulkhead door not to be locked.

In case the building shall be occupied by more than one family, the door in the bulkhead or any scuttle, shall at no time be locked, but may be fastened on the inside by movable bolts or hooks.

SECTION 105.

Fireproof Shutters and Doors.

Every building, except private dwelling-houses and churches, shall have fireproof doors, blinds or shutters, hung to wrought-iron or steel hanging frames or to wrought-iron eyes built into the wall, on every exterior window and opening above the first story thereof, Exterior of building.

Excepting on the front openings of buildings fronting on streets which are more than one hundred feet in width, or where no other buildings are within one hundred feet of such openings. When shutters or doors are not required.

The said doors, blinds or shutters shall be of Standard construction, that is, constructed of pine or other soft wood of two or three thicknesses (depending on size) of matched boards, clinch-nailed, at right angles, or placed diagonally with each other, and securely covered with tin, on both sides and edges, with folded lapped joints, the nails for fastening the same being driven inside the lap; the hinges and bolts, or latches, shall be secured or fastened to the door or shutter by wrought-iron bolts passing through the door or shutter, and secured by nuts and washers on the opposite side after the same has been covered with the tin, and such doors or shutters shall be hung upon a wrought-iron frame, independent of the woodwork of the windows and doors, or to wrought-iron hinges securely fastened in the masonry. Wood tin-covered shutters or doors. Hanging frames.

Metal Window Frames and Sash and Wired Glass.

On any opening where the window frame and sash are of metal, and the sash are glazed with wired glass not less than one-quarter of an inch in thickness, and each pane measuring not more than thirty by twenty-four inches, the same shall be deemed an equivalent of and a substitute for fireproof shutters; except How constructed.

that when an exposing building is within thirty feet, the wire glass in the metal sash shall be double with an air space between the glass, ventilated to the inside.

Shutters Arranged To Be Opened From the Outside.

Certain shutters to open from outside.

All shutters opening on fire-escapes, and at least one row, vertically, in every three vertical rows on the front window openings above the first story of any building, shall be so arranged that they can be readily opened from the outside by firemen.

Rolling Metal Shutters.

To be counter-balanced.

No rolling iron or steel shutters shall be hereafter placed above the first story of any building, and when used on the first story they shall be counter-balanced so that said rolling shutters may be readily opened by the firemen.

Interior Wall Openings To Have Fireproof Doors.

When deemed necessary by Commissioner of Buildings.

All buildings specified in this Section, hereafter erected or altered, having openings in interior walls, shall be provided with suitable fireproof doors where deemed necessary by the Commissioner of Buildings, and to be provided with approved automatic self-closing devices.

Outside and Inside Fireproof Shutters and Doors To Be Closed at Night.

All occupants of buildings shall close all exterior and interior fireproof shutters, doors and blinds at the close of the business of each day.

PART XX.

FIREPROOF BUILDINGS.

SECTION 106.

Fireproof Buildings.

Every building hereafter erected or altered to be used as a theatre, lodging-house, school, jail, public station, hospital, asylum, institution for the use, care or treatment of persons, the height of which exceeds three stories and not more than forty feet in height, and every building hereafter erected or altered to be used as a hotel or an apartment hotel, which exceeds four stories and not more than fifty feet in height (excepting all buildings for which specifications and plans have been heretofore approved by the proper authorities), and every other building the height of which exceeds fifty-five feet or more than four stories in height, shall be built fireproof; that is to say—

Buildings named.

Three stories.

Four stories.

Fifty-five feet, or more than four stories in height.

They shall be constructed with walls of brick, stone, Portland cement concrete, iron or steel in which wood beams or lintels shall not be placed, and in which the floors and roofs shall be constructed with rolled wrought iron or steel floor beams, spaced not more than five feet on centres, for stores, warehouses and factory buildings, and for all other buildings not more than eight feet on centres, and otherwise so arranged as to spacing and length of beams that the load to be supported by them, together with the weights of the materials used in the construction of the said floors, shall not cause a greater deflection of the said beams than one-thirtieth of an inch per foot of span under the total load. The beams shall be tied together at intervals of not more than eight times the depth of the beam with suitable tie-rods.

Fireproof construction stated.

Wrought iron or steel beams.

Tie-rods.

Floor filling between beams.

Between the floor and roof beams shall be placed brick arches springing from the lower flanges of the steel beams, or the spaces between the beams may be filled with hollow tile arches of hard-burnt clay or porous terra-cotta, or arches of Portland cement concrete, plain or reinforced with metal, or such other fireproof composition may be used, provided that in each and all cases the strength and method of construction shall conform to the requirements of Section 107 of this Code.

Material.

Stairs.

The stairs and staircase landings shall be constructed of brick, stone, Portland cement concrete, iron or steel, or a combination of these materials.

Allowed woodwork mentioned.

When not over eight stories or 100 feet high.

No woodwork or other inflammable material shall be used in any of the partitions, furrings or ceilings in any such fireproof buildings, excepting, however, that when the height of the building does not exceed eight stories nor more than one hundred feet, the doors and windows and their frames and trims, the casings, the interior finish when filled solidly at the back with fireproof material, and the floor boards and sleepers directly thereunder, may be of wood, but the space between the sleepers shall be solidly filled with fireproof materials extending up to the underside of the floor boards.

When more than eight stories or more than 100 feet high.

When the height of a fireproof building exceeds eight stories, or more than one hundred feet, the floor surfaces shall be of stone, cement, tiling or similar incombustible material. All outside window frames and sash shall be of metal.

Metal window frames and sash.

Inside window frames, etc.

The inside window frames and sash, doors, trim and other interior finish may be of metal or of wood covered with metal or of such other incombustible material that may be approved by the Commissioner of Buildings.

Hall and Permanent Partitions.

Of fireproof material.

All hall partitions or permanent partitions between rooms in fireproof buildings shall be built of fireproof material and shall not be started on wood sills, nor on wood floor boards, but be built upon the fireproof construction of the floor and extend to the fireproof beam filling above.

To be laid on fireproof material.

Foot blocks.

But this shall not preclude the use of wood block under each iron upright or stud in partitions constructed of iron uprights and lathed with iron, or filled in solidly between the iron studs or uprights with approved fireproof material, provided said wood block or cushion which is to allow for the possible lengthwise expansion of the uprights by heat does not exceed in thickness one-tenth of an inch to the foot of the height of said uprights.

Solid space above doors and windows in partitions.

The tops of all door and window openings in such partitions shall be at least twelve inches below the ceiling line.

Door and window framing of iron.

In all fireproof partitions, other than when made of solid brickwork, the openings for doors and windows in same shall be framed on both sides with iron studs or uprights secured at top and bottom to the floor beams, and with like iron horizontals between the said uprights for the window openings and door heads.

Inclosing of stair halls.

In all fireproof buildings, other than stores, warehouses and factories, if exceeding three stories or forty feet in height, the stair halls shall be inclosed on each story with fireproof material, same as required for elevators, to so form an inclosure the floor area of which shall not be more than three times the united area of the floor openings for the elevators and stairs.

Area for inclosure.

SECTION 107.

Fireproof Floor Fillings Between Beams.

Common brick arches.

Between the wrought iron or steel floor beams shall be placed brick arches springing from the lower flanges of the steel beams—

Rise per foot of span.

Said brick arches shall be designed with a rise to safely carry the imposed load but never less than one and one-quarter inches for each foot of span between the beams, and they shall have a thickness of not less than four inches for spans of six feet or less, and eight inches for spans over six feet, or such additional thickness as may be required by the Commissioner of Buildings.

How laid.

Said brick arches shall be composed of good, hard brick or hollow brick of ordinary dimensions laid to a line on the centres, properly and solidly bonded, each longitudinal line of brick breaking joints with the adjoining lines in the same ring and with the ring under it when more than a four-inch arch is used. The said arches shall spring from protecting skew-backs of burnt clay resting on and covering the lower flanges of the beams, so as to afford a minimum protection of two inches of solid burnt clay material underneath the flanges, or otherwise entirely incasing the said flanges as provided for in this Section. The brick shall be well wet and the joints filled in solid with cement mortar. The arches shall be well grouted and properly keyed.

Hollow Tile Arches of Burnt Clay or Terra-Cotta.

Hard-burned clay or porous terra-cotta.

Or the space between the beams may be filled in with hollow tile arches of hard-burnt clay, semi-porous or porous terra-cotta of uniform density and hardness of burn. The shells and webs of hollow tile arch blocks shall be not less than one inch in thickness.

Skew-backs.

Skew-backs shall be used with all forms of hollow tile arches and be of such form and section to properly receive the thrust of the arches. The shells and webs of the skew-backs shall be not less than one and one-half inches in thickness, except that the portion extending under the lower flanges of the beams shall be not less than two inches of solid material not interrupted by any interior cavities or spaces. The said arches shall be of a depth and sectional area to carry the load to be imposed thereon, without straining the material beyond its safeworking load, but the thickness of the shells and webs shall in no case be less than herein required, and the depth shall not be less than one and three-quarter inches for each foot of span, not including any portion of the depth of the tile projecting below the underside of the beams, a variable distance being allowed of not over six inches in the span between the beams, if the soffits of the tile are horizontal; but if said arches are segmental, having a rise of not less than one and one-quarter inches for each foot of span, the depth of the tile shall be not less than six inches. The joints shall be solidly filled with cement mortar as required for common brick arches and the arch so constructed that the key parts shall always fall in the central portion. The shells and webs of all end construction blocks shall abut, one against another.

Depth per foot of span for flat arches.

Segmental arch.

Joints filled with cement mortar.

End construction.

Arches of Portland Cement Concrete Plain or Reinforced With Metal.

Segmental in form.

Or the space between the beams may be filled with arches of Portland cement concrete, segmental in form, and which shall have a rise of not less than one and one-quarter inches for each foot of span between the beams. The concrete shall be not less than four inches in thickness at the crown of the arch and shall be mixed in the proportions required by Section 18 of this Code. These segmental arches, if reinforced, shall in all cases be reinforced or protected with steel rods or bars, reticulated or meshed steel, or similar metal weighing not less than one pound per square foot, and having openings not larger than three inches square. Such reinforcing metal if essential to secure the required strength of the arches, shall be so imbedded that the metal is covered by not less than one inch of the concrete; but if used partly or wholly as a centering for and if not essential to secure the required strength of the arches, the metal centering need not be wholly imbedded in the concrete.

Thickness at crown of arch.

Reinforced with metal.

In freezing weather.

No concrete work shall be installed in freezing weather, nor allowed to freeze after being put in place.

Various Fillings Between Floor Beams.

Or between the said beams may be placed solid or hollow burnt clay, brick, or concrete slabs in flat or curved shapes, concrete or other fireproof composition, and any of said materials may be used plain or in combination with wire cloth, expanded metal, wire strands, or wrought-iron or steel bars; said metal if used to be in all cases so imbedded in the

fireproof composition or combination that the metal shall be covered by not less than one inch of the fireproof material; but in any such construction and as a precedent condition to the same being used, tests shall be made as herein provided by the manufacturer thereof under the direction and to the satisfaction of the Commissioner of Buildings, and evidence of the same shall be kept on file in the Department of Buildings, showing the nature and result of the test. Such tests shall be made by constructing within inclosure walls a platform consisting of four rolled steel beams, ten inches deep, weighing each twenty-five pounds per lineal foot, and placed four feet between the centres, and connected by transverse tie rods, and with a clear span of fourteen feet for the two interior beams and with the two outer beams supported on the side walls throughout their length, and with both a filling between the said beams, and a fireproof protection of the exposed parts of the beams of the system to be tested, constructed as in actual practice, with the quality of material ordinarily used in that system and the ceiling plastered below, as in a finished job; such filling between the two interior beams being loaded with a distributed load of one hundred and fifty pounds per square foot of its area and all carried by such filling; and subjecting the platform so constructed to the continuous heat of a wood fire below, averaging not less than seventeen hundred degrees Fahrenheit for not less than four hours, during which time the platform shall have remained in such condition that no flame will have passed through the platform or any part of the same, and that no part of the load shall have fallen through, and that the beams shall have been protected from the heat to the extent that after applying to the underside of the platform at the end of the heat test a

Tests as a precedent condition of use.

How tests shall be made.

Filling between beams.

Load.

Fire.

Water.

Additional load.

stream of water directed against the bottom of the platform and discharged through a one and one-eighth inch nozzle under sixty pounds pressure for five minutes, and after flooding the top of the platform with water under low pressure, and then again applying the stream of water through the nozzle under the sixty pounds pressure to the bottom of the platform for five minutes, and after a total load of six hundred pounds per square foot uniformly distributed over the middle bay shall have been applied and removed, after the platform shall have cooled, the maximum deflection of the interior beams shall not exceed two and one-half inches. The Commissioner of Buildings may from time to time prescribe additional or different tests than the foregoing for systems of filling between iron or steel floor beams, and the protection of the exposed parts of the beams. Any system failing to meet the requirements of the test of heat, water and weight as herein prescribed shall be prohibited from use in any building hereafter erected. Duly authenticated records of the test heretofore made of any system of fireproof floor filling and protection of the exposed parts of the beams may be presented to the Commissioner of Buildings, and if the same be satisfactory to said Commissioner it shall be accepted as conclusive.

Different tests may be prescribed.

Systems failing under test, use prohibited.

Authenticated tests may be accepted.

Protection Against Injury by Freezing.

Temporarily covered over when necessary.

No filling of any kind which may be injured by frost shall be placed between said floor beams during freezing weather, and if the filling is placed during any winter month, it shall be temporarily covered with suitable material for protection from being frozen.

Cinder Concrete Filling On Top.

To be filled up to underside of wood floor boards.

On the top of any arch, lintel or other device which does not extend to the plane of the underside of the

floor finish, cinder concrete or other suitable fireproof material shall be placed to solidly fill up the space to a level with the top of said floor beams, and shall be carried to the underside of the wood floor boards in case such be used.

Component parts.

Cinder concrete shall be made with not less than one part of Portland cement by volume, to ten parts of other material, and the top flanges of all beams shall be entirely imbedded in same to a depth of not less than two inches.

Temporary Centering.

When to be removed.

Temporary centering when used in placing fireproof systems between floor beams, shall not be removed within twenty-four hours, or until such time as the mortar or material has set.

Strength for Fireproof Floor Fillings.

Material to be within safe bearing load.

All fireproof floor systems shall be of sufficient strength to safely carry the load to be imposed thereon without straining the material in any case beyond its safe working load.

Pipe Openings Through Fireproof Floors.

To be shown on plans.

Openings through fireproof floors for pipes, conduits and similar purposes shall be shown on plans filed in the Department of Buildings.

Limited size for holes after floors are in.

After the floors are constructed no opening greater than eight inches square shall be cut through said floors, unless properly boxed or framed around with iron;

Openings to be filled.

And such openings shall be filled in with fireproof material after the pipes or conduits are in place.

Roof Domes.

Construction of.

Nothing in this Section contained shall be deemed to prohibit the construction of the roof domes, pro-

vided that the materials used therefor are in accordance with those specified in this Section, and that the unit stresses do not exceed those fixed in Section 138 of this Code, and that in all respects the construction shall be satisfactory to the Commissioner of Buildings.

SECTION 108.

Incasing Interior Columns.

All cast-iron, wrought-iron or rolled-steel columns, including the lugs and brackets on same, used for vertical supports in the interior of any fireproof building, or used to support any fireproof floor—

Material for insulation.

Shall be entirely protected with not less than four inches of hard-burned brickwork, terra cotta, concrete or other fireproof material, without any air space next to the metal, securely applied; but no plaster of paris or lime mortar shall be used for this purpose, nor shall any plaster, whether or not on metal lathing, be considered a part of the covering required.

No single block or unit of insulating material used for column covering shall have a greater vertical dimension than six inches when placed in position, nor shall the shells and webs of hollow tile or terra-cotta blocks be less than one inch in thickness, and these blocks shall be laid up with Portland cement mortar, and the said blocks be suitably tied or anchored together.

Lugs and brackets.

The extreme outer edges of lugs, brackets and similar supporting metal may project to within seven-eighths of an inch of the surface of the fireproofing.

Continuous fireproof covering.

The fireproof coverings shall start upon the fireproof floors, and continuously extend to the fireproof

ceilings or underside of girders above, and be entirely independent of any ornamental base or capital.

Conduits.

No pipes, wires or conduit of any kind shall be incased in the fireproofing surrounding any column, girder or beam of steel or iron, but shall be placed outside of such fireproofing.

Jacketing.

Where the fireproof protection of columns is exposed to damage from the trucking or handling of merchandise, such fireproof protection shall be jacketed on the outside for a height not less than four feet from the floor with sheet metal, or with vertical strips of oak; and if the oak be used for such purpose the vertical strips shall be sufficiently separated from each other always to show that the woodwork of the guard has been placed entirely on the outside of the fireproof material which incases the metal column.

Incasing Exposed Sides and Bottom and Top Plates and Flanges of Girders and Beams.

Girders, material and thickness of insulation.

The exposed sides of wrought-iron or rolled-steel girders supporting walls, iron or steel floor beams, or supporting floor arches or floors, shall be entirely incased with hard-burned clay, porous terra cotta, concrete or other fireproof material not less than four inches in thickness, and the bottom and top plates and flanges of such girders shall have not less than two inches in thickness, of such insulating material.

Beams, material and thickness of insulation.

The bottom and top plates and flanges of all wrought-iron or rolled-steel floor and roof beams, and all exposed portions of such beams below the abutments of floor arches or filling between the floor beams shall be entirely incased with hard-burned clay, porous terra cotta, concrete or other fireproof material, such incasing material to be not less than two inches in thickness.

Securely attached.

All incasing material to be securely attached to the girders and beams.

The shells and webs of hollow tile blocks shall be not less than one inch in thickness, and shall be laid up with Portland cement mortar, and the said blocks be suitably tied or anchored together.

Incasing Interior Columns and Girders in Non-Fireproof Buildings.

Material and thickness of insulation.

In all non-fireproof buildings where iron or steel structural members are incorporated in the construction of the building, said iron or steel columns, girders, beams and other structural metal members shall be incased as before described in this Section, except that the thickness of such insulating material may be not less than two inches.

PART XXI.

IRON AND STEEL CONSTRUCTION.

SECTION 109.

Skeleton-Constructed Buildings.

Columns.

Where columns are used to support iron or steel girders carrying inclosure walls, the said columns shall be of cast iron, wrought iron, or rolled steel, and on their exposed surfaces be constructed to resist fire by having a casing of brickwork not less than eight inches in thickness on the outside surfaces, nor less than four inches in thickness on the inside surfaces, and all bonded into the brickwork of the inclosure walls.

Incasing of columns.

Incasing outside surfaces of girders.

The exposed sides of the wrought-iron or steel girders shall be similarly covered in with brickwork not less than four inches in thickness on the outer surfaces and tied and bonded, but the extreme outer edge of the flanges of beams or plates or angles con-

nected to the beams, may project to within two inches of the outside surface of the brick casing.

Incasing inside surfaces of girders.

The inside surfaces of girders may be similarly covered with brickwork, or if projecting inside of the wall they shall be protected by terra cotta, concrete or other fireproof material not less than four inches in thickness.

Girders required at each story.

Girders for the support of the inclosure walls shall be placed at the floor line of each story.

The skeleton steel frame of a building shall be independent from that of an adjoining building, and the frame of one building shall not be bolted or riveted in any manner to the frame of any other building.

SECTION 110.

Reinforced Concrete or Concrete-Steel Constructed Buildings.

Definition.

The term "reinforced concrete" or "concrete-steel" in this Section shall be undersood to mean an approved concrete mixture reinforced by steel of any shape, so combined that the steel will take up the tensional stresses and assist in the resistance to shear.

Design to be accepted.

Reinforced concrete construction may be accepted for fireproof buildings, if designed as hereinafter prescribed; provided, that the aggregate for such concrete shall be hard-burned broken bricks, or terra-cotta, clean furnace clinkers, entirely free of combustible matter, clean broken stone, or furnace slag, or clean gravel, together with clean siliceous sand, if sand is required to produce a close and dense mixture; and provided, further, that the minimum thickness of concrete surrounding and reinforcing members one-quarter inch or less in diameter shall be one

Component parts.

Insulation.

inch; and for members heavier than one-quarter inch the minimum thickness of protecting concrete shall be four diameters, taking that diameter, in the event of bars of other than circular cross-section, which lies in the direction in which the thickness of the concrete is measured; but no protecting concrete need be more than four inches thick for bars of any size; and provided, further, that all columns and girders of reinforced concrete shall have at least one inch of material on all exposed surfaces over and above that required for structural purposes; and all beams and floor slabs shall have at least three-quarters inch of such surplus material for fire-resisting purposes; but this shall not be construed as increasing the total thickness of protecting concrete as herein specified.

All the requirements herein specified for protection of steel and for fire-resisting purposes shall apply to reinforced concrete filling between rolled-steel beams, as well as to reinforced concrete beams and to entire structures in reinforced concrete. Any concrete structure or the floor filling in same reinforced or otherwise, which may be erected on a permanent centering of sheet metal, of metal lathing and curved bars or a metal centering of any other form, must be strong enough to carry its loads without assistance from the centering, unless the concrete is so applied as to protect the centering as herein specified for metal reinforcement.

Centering.

Plaster covering insufficient.

Exposed metal centering or exposed metal of any kind will not be considered a factor in the strength of any part of any concrete structure, and a plaster finish applied over the metal shall not be deemed sufficient protection.

Mixing.

All concrete for reinforced concrete construction whenever used in such buildings must be mixed in a

machine which mixes one complete batch at a time, and entirely discharges it before another is introduced. At least twenty-five complete revolutions must be made at such a rate as to turn the concrete over at least once in each revolution for each batch.

Detail drawings to be filed.

Before permission to erect any concrete-steel structure is issued, complete drawings and specifications shall be filed with the Commissioner of Buildings, showing all details of the construction, the size and position of all reinforcing rods, stirrups, etc., and giving the composition of the concrete.

Superintendence of work.

The execution of work shall be performed by workmen under the direct supervision of a competent foreman or superintendent.

Concrete.

The concrete shall be mixed in the proportions of one of cement, two of sand and four of other aggregates as before provided; or the proportions may be such that the resistance of the concrete to crushing shall not be less than 2,000 pounds per square inch after hardening for twenty-eight days, but for reinforced or plain concrete columns the mixture shall not be leaner than one part of cement, two of sand and five of the coarser aggregate in any case. The tests to determine this value must be made under the direction of the Commissioner of Buildings. The concrete used in concrete-steel construction must be what is usually known as a "wet" mixture.

Tests.

Portland cements.

Only high-grade Portland cements shall be permitted in reinforced concrete or concrete-steel constructed buildings. Such cements, when tested neat, shall, after one day in air, develop a tensile strength of at least 300 pounds per square inch; and after one day in air and six days in water shall develop a tensile strength of at least 500 pounds per square inch; and after one day in air and twenty-seven days in

Strength of cements.

water shall develop a tensile strength of at least 600 pounds per square inch. Other tests, as to fineness, constancy or volume, etc., made in accordance with the standard method prescribed by the American Society of Civil Engineers, may, from time to time, be prescribed by the Commissioner of Buildings.

Sand. The sand to be used must be clean, sharp grit sand, free from loam or dirt, and shall not be finer than the standard sample kept in the Department of Buildings.

Stone or other aggregates. The stone used in the concrete shall be a clean, broken stone, of a size that will pass through a three-quarter inch ring, or good gravel may be used in the same proportion as broken stone, or broken hard bricks, or terra-cotta, or furnace slag, or hard clean clinkers may be used.

Steel. The steel shall meet the requirements of Section 21 of this Code.

Design. Concrete-steel shall be designed in accordance with the following assumptions and requirements:

(1) The adhesion between the concrete and the steel is sufficient to make the two materials act together; the unit value of the adhesion is at least equal to the unit shearing strength of concrete.

(2) The design shall be based on the assumption of a load four times as great as the total working load (ordinary dead load plus ordinary live loads) producing a stress in the steel equal to the elastic limit, and a stress in the concrete equal to two thousand pounds per square inch.

(3) The modulus of elasticity of concrete at two thousand pounds per square inch is equal to one-eighteenth of the modulus of elasticity of steel.

(4) The steel takes all the tensile stress.

(5) The stress-strain curve of concrete in com-

pression, when the stress in the extreme fibre is two thousand pounds per square inch, may be assumed.

(a) As a straight line.

(b) As a parabola with its axis vertical and its vertex on the neutral axis of the beam, girder or slab, or

(c) As an empirical curve with an area one-quarter greater than if it were a straight line, and with its centre of gravity at the same height as that of the parabolic area assumed in (b).

Flexure.

(6) The assumption belonging to the common theory of flexure, where not modified by any of the foregoing, will apply.

Stresses.

In the design of structures involving reinforced concrete girders and beams, as well as slabs, the girders and beams shall be treated as T-beams, with a portion of the slab acting as flange, in each case. The portion of the slab so acting shall be determined by assuming that in any horizontal-plane section of the flange, the stresses are distributed as the ordinates of a parabola, with its vertex in the stress-strain curve and with its axis in a longtudinal vertical plane through the centre of the rib of the T.

Shearing strength.

The shearing strength of concrete, corresponding to a compressive strength of two thousand pounds per square inch, shall be assumed at two hundred pounds per square inch.

Transmission of loads.

All reinforced concrete T-beams must be reinforced against the shearing stress along the plane of junction of the rib and the flange. Where reinforced concrete girders carry reinforced concrete beams, the portion of the floor slab acting as flange to the girder must be reinforced with bars near the top, at right angles to the girder, to enable it to transmit local loads directly to the girder and not through the beams, thus avoiding an integration of compressive

stresses due to simultaneous action as floor slab and girder flange.

Indirect compression.

Concrete indirect compression shall not be stressed, under the working load, more than three hundred and fifty pounds per square inch. Reinforced compression members shall be designed on the assumption that this stress in the concrete will be simultaneous with one of six thousand pounds per square inch in the steel.

Hooped concrete.

Should the use of hooped concrete be proposed, the working stresses will be a subject for special consideration by the Commissioner of Buildings.

Field work.

In the execution of work in the field, work must be so carried on that the ribs of all girders and beams shall be monolithic with the floor slab.

Joints.

In all reinforced concrete structures, special care must be taken with the design of joints to provide against local stresses and secondary stresses due to the continuity of the structure.

Bending moments.

In the determination of the bending moments due to the external forces, beams and girders shall be considered as simply supported at the ends, no allowance being made for continuous construction over supports. Floor plates, when constructed continuous and when provided with reinforcement at top of plate over the supports, may be treated as continuous beams, the bending moment for uniformly distributed loads being taken at not less than $\frac{W\,L}{10}$; the bending moment may be taken at $\frac{W\,L}{20}$ in the case of square floor plates which are reinforced in both directions and supported on all sides.

Shearing stresses.

When the shearing stresses developed in any part of a reinforced concrete or concrete-steel constructed building exceed under the multiplied loads, the shearing strength as fixed in this Section, a sufficient

amount of steel shall be introduced in such a position that the deficiency in the resistance to shear is overcome.

When the safe limit of adhesion between the concrete and steel is exceeded, provision must be made for transmitting the strength of the steel to the concrete. Additional provision.

Concrete-steel may be used for columns in which the ratio of length to least side or diameter does not exceed twelve. The reinforcing rods must be tied together at intervals of not more than the least side or diameter of the column. Use for columns. Rods to be tied together.

The contractor must be prepared to make load tests on any portion of a reinforced concrete or concrete-steel constructed building within a reasonable time after erection as often as may be required by the Commissioner of Buildings. The tests must show that the construction will sustain a load with a factor of safety for floors and structural members as required by Section 136 of this Code. Load tests. What tests must show.

SECTION 111.

Steel and Wrought Iron Columns.

No part of a steel or wrought iron column shall be less than three-eighths of an inch thick. Least thickness of metal.

No wrought iron or rolled steel column shall have an unsupported length of more than forty times its least lateral dimension or diameter, except as modified by Section 137 of this Code, and also except in such cases as the Commissioner of Buildings may specially allow a greater unsupported length. Greatest unsupported length. Exceptions.

The ends of all columns shall be faced to a plane surface at right angles to the axis of the columns. Ends.

And the connection between them shall be made with splice plates. Connections.

The joint may be effected by rivets of sufficient size and number to transmit the entire stress, and then the Joints.

splice plates shall be equal in sectional area to the area of column spliced.

Connections. When the section of the columns to be spliced is such that spliced plates cannot be used, a connection formed of plates and angles may be used, designed to properly distribute the stress.

Proportional. No material, whether in the body of the column or used as lattice-bar or stay-plate, shall be used in any wrought iron or steel column of less thickness than one-thirty-second of its unsupported width measured between centers of rivets transversely, or one-sixteenth the distance between centers of rivets in the direction of the stress.

Stay-plates. Stay-plates are to have not less than four rivets, and are to be spaced so that the ratio of length by the least radius of gyration of the parts connected does not exceed forty; the distance between the nearest rivets of two stay-plates shall in this case be considered as length.

In lengths. Steel and wrought iron columns shall be made in one, two or three story lengths, and the material shall be rolled in one length wherever practicable to avoid intermediate splices.

Filling plates. Where any part of the section of a column projects beyond that of the column below, the difference shall be made up by filling plates secured to column by the proper number of rivets.

Shoes. Shoes of iron or steel, as described for cast iron columns, or built shoes of plates and shapes may be used, complying with same requirements.

SECTION 112.

Cast Iron Columns.

Least thickness of metal. Cast iron columns shall have a diameter of not less than five inches shell of a thickness not less than three-quarters of an inch.

Nor shall they have an unsupported length of more than twenty times their least lateral dimension or diameter, except as modified by Section 137 of this Code, and except the same may form part of a staircase, and also except in such specific cases as the Commissioner of Buildings may specially allow a greater unsupported length. Greatest unsupported length. Exceptions.

All cast iron columns shall be of good workmanship and material. Quality of material and workmanship.

The top and bottom flanges, seats and lugs shall be of ample strength, reinforced by fillets and brackets; they shall be not less than one inch in thickness when finished. Flanges, seats and lugs.

The interior space of cast-iron columns shall in no case be filled with any material.

All columns shall be faced at the ends to a plane surface at right angles to the axis of the column. Ends.

Where cast-iron columns are placed vertically one on top of another they shall be securely bolted together at the joints through flanges cast on the columns and a plate between the flanges. If the column is square or rectangular, the top flange shall project not less than two and one-half inches from the outer surfaces of the column on all sides, and the bottom flange of the column immediately above the same shall project as far as the top flange of the column below. If the column is round or many sided the top flange shall project not less than two and one-half inches at its least projection from the outer surface of the column, and be square or rectangular in shape, and the bottom flange of the column immediately above the same shall be of corresponding shape and project as far as the top flange of the column below. Each flange will be reinforced with a bracket placed centrally on the column, and with fillets both on the bracket and flange. In case the column is placed on Connections. Square columns. Flanges. Round columns.

the dividing line of the lot upon which the building is to be erected, the flanges on that side only may be omitted.

Joint plates.

Between the joints of cast-iron columns placed vertically over each other there shall be in each case a solid cast iron plate not less than one and one-quarter of an inch in thickness, of the same dimensions as the flanges of the columns, and planed true on both sides, or a plate of mild-steel, not less than five-eighths of an inch thick, may be used instead of the cast-iron plate. The columns shall be bolted together with bolts not less than three-quarters of an inch in diameter passing through the two flanges and the intermediate plate, the bolts being of sufficient length to allow the nuts to be screwed up tightly, and as each column is placed in position the bolts shall also be placed in position and the nuts shall be tightly screwed up. One bolt shall be placed at each corner of the plate and flanges, and the number of bolts shall be never less than four. The holes for these bolts shall be drilled to a template.

Bolting.

Number of bolts.

Increase in size of columns.

Where cast-iron columns are placed vertically one on top of the other, the diameters shall be increased not less than one inch for each two stories below the columns on the two stories above in the case of round columns, and in the case of square or rectangular columns the same ratio of increase shall follow on at least two sides of the columns in each two stories below the uppermost two columns of the vertical line. This increase in size shall apply to interior as well as to exterior columns.

Columns of varying diameters resting on top of each other.

The core of a column below a joint shall be not larger than the core of the column above and the metal shall be tapered down for a distance of not less than six inches.

Thickness of shell proportionate to diameter of column.

The thickness of metal shall be not less than one-twelfth the diameter of the greatest lateral dimension

of cross section, but never less than three-quarters of an inch.

When thickness is not equal.

Wherever the core of a cast iron column has shifted more than one-fourth the thickness of the shell, the strength shall be computed assuming the thickness of metal all around equal to the thinnest part, and the column shall be condemned and rejected if this computation shows the strength to be less than required by this Code.

Imperfections in casting.

Wherever blowholes or imperfections are found in a cast iron column which reduces the area of the cross section at that point more than ten per cent., such column shall be condemned and rejected.

To be drilled to exhibit thickness.

Cast iron posts or columns not cast with one open side or back, before being set up in place, shall have a three-eighths of an inch hole drilled in the shaft of each post or column, by the manufacturer or contractor furnishing the same, to exhibit the thickness of the castings; and any other hole or holes of a similar size which the Commissioner of Buildings may require, shall be drilled in the said posts or columns by the said manufacturer or contractor at their expense.

Shoes under bottom tier of columns.

Iron or steel shoes or plates shall be used under the bottom tier of columns when necessary to properly distribute the load on the foundation.

Shoes planed.

Shoes shall be planed on top.

SECTION 113.

Double Columns.

To support wall above same.

In all buildings hereafter erected or altered, where any iron or steel column or columns are used to support a wall or part thereof, whether the same be an exterior or an interior wall, and columns located below the level of the sidewalk which are used to support exterior walls or arches over vaults,

Constructed double.

The said column or columns shall be either constructed double, that is, an outer and an inner column, the inner column alone to be of sufficient strength to sustain safely the weight to be imposed thereon, and the outer columns shall be one inch shorter than the inner columns, or such other iron or steel column of sufficient strength and protected with not less than four inches of hard-burned brickwork, terra-cotta, concrete, or other approved fireproof material securely applied,

Protected columns.

Not required for street or court walls.

Except that double or protected columns shall not be required for walls fronting on streets or courts.

SECTION 114.

Party Wall Posts.

Width and depth.

If iron or steel posts are to be used as party posts in front of a party wall, and intended for two buildings, then the said posts shall be not less in width than the thickness of the party wall, nor less in depth than the thickness of the wall to be supported above.

Space between posts and walls.

Iron or steel posts in front of side, division or party walls, shall be made perfectly tight between the posts and walls with masonry.

Intermediate posts and bearings affected by same.

Intermediate posts may be used, which shall be sufficiently strong, and the lintels thereon shall have sufficent bearings to carry the weight above with safety.

SECTION 115.

Steel and Iron Girders.

Rivets in flanges.

Rivets in flanges shall be spaced so that the least value of a rivet for either shear or bearing is equal or greater than the increment of strain due to the distance between adjoining rivets. All other rules given under riveting shall be followed. The length of rivets between heads shall be limited to four times the diameter.

The compression flange of plate girders shall be secured against buckling, if its length exceeds 30 times its width. Secured against buckling.

If splices are used, they shall fully make good the members spliced in either tension or compression. Splices.

Stiffeners shall be provided over supports and under concentrated loads; they shall be of sufficient strength, as a column, to carry the loads, and shall be connected with a sufficient number of rivets to transmit the stresses into the web plate. Stiffeners shall fit so as to support the flanges of the girders. If the unsupported depth of the web plate exceeds sixty times its thickness, stiffeners shall be used at intervals not exceeding one hundred and twenty times the thickness of the web. Stiffeners.

SECTION 116.

Rolled Steel and Wrought Iron Beams Used as Girders.

When rolled steel or wrought iron beams are used in pairs to form a girder, they shall be connected together by bolts and iron separators at intervals of not more than five feet. Separators and bolts.

All beams twelve inches and over in depth shall have at least two bolts to each separator. When separators to have two or more bolts.

SECTION 117.

Cast Iron Lintels.

Cast iron lintels shall not be used for spans exceeding eight feet. Maximum span.

Minimum thickness.

Cast iron lintels or beams shall be not less than three-quarters of an inch in thickness in any of their parts.

SECTION 118.

Plates Under Ends of Lintels and Girders.

Cast-iron or steel plates.

When the lintels or girders are supported at the ends by brick walls or piers they shall rest upon cast-iron or steel plates of adequate strength by the full size of the bearings.

Loads not to exceed safe limits.

In all cases the safe loads shall not exceed those fixed by Section 138 of this Code.

SECTION 119.

Rolled Steel and Wrought Iron Floor and Roof Beams.

Quality.

All rolled steel and wrought iron floor and roof beams used in buildings shall be of full weight, straight and free from injurious defects.

Holes for tie rods.

Holes for tie rods shall be placed as near the thrust of the arch as practicable.

Distance apart for tie rods.

The distance between tie rods in floors shall not exceed eight feet, and shall not exceed eight times the depth of floor beams twelve inches and under.

Shapes when used as skewbacks.

Channels or other shapes where used as skewbacks, shall have a sufficient resisting moment to take up the thrust of the arch.

Stone or metal plates.

Bearing plates of metal shall be used to reduce the pressure on the wall to the working stress.

Beams secured to girders.

Beams strapped.

Beams resting on girders shall be securely riveted or bolted to the same; where joined on a girder, tie straps of one-half inch net sectional area shall be used, with rivets or bolts to correspond.

Anchors shall be provided at the ends of all such beams bearing on walls. Anchors at ends of beams on walls.

SECTION 120.

Templates Under Ends of Steel or Iron Floor Beams.

Under the ends of all iron or steel beams where they rest on the walls, cast-iron or steel templates shall be built into the walls. Under ends of beams resting on walls.

Templates under ends of steel or iron beams shall be of such dimensions as to bring no greater pressure upon the brickwork than that allowed by Section 138 of this Code. Dimensions proportionate to load.

When rolled iron or steel floor beams, not exceeding six inches in depth, are placed not more than thirty inches on centres, no templates shall be required. When no templates required.

SECTION 121.

Framing and Connecting Structural Work.

All iron or steel trimmer beams, headers, and tail beams, shall be suitably framed and connected together, Framed and connected together.

And the iron or steel girders, columns, beams, trusses and all other iron work of all floors and roofs shall be strapped, bolted, anchored and connected together, and to the walls. Strapped, bolted and anchored.

All beams framed into and supported by other beams or girders, shall be connected thereto by angles or knees of a proper size and thickness, and have sufficient bolts or rivets in both legs of each connecting angle to transmit the entire weight or load coming on the beam to the supporting beam or girder. Angle iron knees.

In no case shall the shearing value of the bolts or rivets or the bearing value of the connection angles, provided for in Section 138 of this Code, be exceeded. Bolts, rivets and angles.

SECTION 122.

Riveting of Structural Steel and Wrought Iron Work.

Distance from rivet holes.

The distance from centre of a rivet hole to the edge of the material shall be not less than—

$\frac{5}{8}$	of an	inch	for	$\frac{1}{2}$	inch	rivets,
$\frac{7}{8}$	"	"	"	$\frac{5}{8}$	"	"
$1\frac{1}{8}$	inches		"	$\frac{3}{4}$	"	"
$1\frac{1}{2}$	"		"	1	"	"

Wherever possible, however, the distance shall be equal to two diameters.

Rivets, machine driven.

All rivets, wherever practicable, shall be machine driven. The rivets in connections shall be proportioned

Pitch of rivets.

and placed to suit the stresses. The pitch of rivets shall never be less than three diameters of the rivet, nor more than six inches. In the direction of the stress it shall not exceed sixteen times the least thickness of the outside member. At right angles to the stress it shall not exceed thirty-two times the least thickness of the outside member.

Accurate holes.

All holes shall be punched accurately, so that upon assembling a cold rivet will enter the hole without straining the material by drifting. Occasional slight errors shall be corrected by reaming.

Rivets to fill holes.

The rivets shall fill the holes completely; the heads shall be hemispherical and concentric with the axis of the rivet.

Gussets.

Gussets shall be provided wherever required, of sufficient thickness and size to accommodate the number of rivets necessary to make a connection.

SECTION 123.

Bolting of Structural Steel and Wrought Iron Work.

Bolt connections.

Where riveting is not made mandatory connections may be effected by bolts. These bolts shall be of wrought iron or mild steel and they shall have U. S. Standard threads. The threads shall be full and clean, the nut shall be truly concentric with the bolt, and the thread shall be of sufficient length to allow the nut to be screwed up tightly.

Bolts and nuts.

Bevel washers.

When bolts go through bevel flanges, bevel washers to match shall be used so that head and nut of bolt are parallel.

Suspender bolts.

When bolts are used for suspenders, the working stresses shall be reduced for wrought iron to 10,000 pounds and for steel to 14,000 pounds per square inch of net area, and the load shall be transmitted into the head or nut by strong washers distributing the pressure evenly over the entire surface of the same.

Washers.

Turned bolts.

Turned bolts in reamed holes shall be deemed a substitute for field rivets, but the diametrical clearance shall not exceed one-sixty-fourth of an inch if turned bolts are used.

SECTION 124.

Steel and Wrought Iron Trusses.

Design.

Trusses shall be of such design that the stresses in each member can be calculated.

Lateral and sway bracing.

All trusses shall be held rigidly in position by efficient systems of lateral and sway bracing, struts being spaced so that the maximum limit of length to least radius of gyration, established in Section 111 of this Code, is not exceeded.

Any member of a truss subjected to transverse stress, in addition to direct tension or compression shall have

Total stresses not to exceed safe working stresses.

the stresses causing such strain added to the direct stresses coming on the member, and the total stresses thus formed shall in no case exceed the working stresses stated in Section 138 of this Code.

SECTION 125.

Riveted Steel and Wrought Iron Trusses.

In tension, net area only to be calculated.

For tension members, the actual net area only, after deducting rivet holes, one-eighth inch larger than the rivets, shall be considered as resisting the stress.

When one flange only of angle iron is riveted.

If tension members are made of angle irons riveted through one flange only, only that flange shall be considered in proportioning areas. Rivets to be proportioned as prescribed in Section 122 of this Code.

Bending strains.

If the axes of two adjoining web members do not intersect within the line of the chords, sufficient area shall be added to the chord to take up the bending strains, or the web members shall be connected by plates so arranged that the axes of the web members prolonged will intersect on the axis of the chord.

Connections.

No bolts shall be used in the connections of riveted trusses, excepting when riveting is impracticable, and then the holes shall be drilled or reamed.

SECTION 126.

Steel and Iron Pin-Connected Trusses.

Allowable bending stresses.

The bending stresses on pins shall be limited to 20,000 pounds for steel and 15,000 pounds for wrought iron.

Eye-bars.

All compression members in pin-connected trusses shall be proportioned, using seventy-five per cent. of the permissible working stress for columns. The heads of all eye-bars shall be made by upsetting or forging. No weld will be allowed in the body of the bar. Steel

eye-bars shall be annealed. Bars shall be straight before boring.

Pin-holes. All pin-holes shall be bored true, and at right angles to the axis of the members, and must fit the pin within 1-32d of an inch. The distances of pin-holes from centre to centre for corresponding members shall be alike, so that, when piled upon one another, pins will pass through both ends without forcing.

Eyes and screw ends. Eyes and screw ends shall be so proportioned that upon test to destruction, fracture will take place in the body of the member.

Pins. All pins shall be accurately turned.

Pin-plates. Pin-plates shall be provided wherever necessary to reduce the stresses on pins to the working stresses prescribed in Section 138 of this Code. These pin-plates shall be connected to the members by rivets of sufficient size and number to transmit the stresses without exceeding working stresses.

Rivets. All rivets in members of pin-connected trusses shall be machine driven. All rivets in pin-plates which are necessary to transmit stress shall be also machine driven.

Connections. The main connections of members shall be made by pins. Other connections may be made by bolts.

Combination of riveted and pin-connected members. If there is a combination of riveted and pin-connected members in one truss, these members shall comply with the requirements for pin-connected trusses; but the riveting shall comply with the requirements of Section 122 of this Code.

SECTION 127.

Iron and Other Metal Fronts To Be Filled In.

Masonry filling. All cast iron or metal plates of fronts shall be backed up or filled in with masonry of the thicknesses provided for in Sections 31 and 32.

SECTION 128.

Painting of Structural Metal Work.

Surfaces cleaned and painted.

All structural metal work shall be cleaned of all scale, dirt and rust and be thoroughly coated with one coat of suitable paint.

Cast-iron columns inspected before painting.

Cast iron columns shall not be painted until after inspection by the Department of Buildings.

Surfaces in contact to be painted.

Where surfaces in riveted work come in contact, they shall be painted before assembling.

Additional coat of paint after erection.

After erection all work shall be painted at least one additional coat.

Metal under water.

All iron or steel used under water shall be inclosed with concrete.

PART XXII.

FLOOR LOADS—TEMPORARY SUPPORTS.

SECTION 129.

Floor Loads.

Dead loads defined.

The dead loads in all buildings shall consist of the actual weight of walls, floors, roofs, partitions, and all permanent construction.

Live loads defined.

The live or variable loads shall consist of all loads other than dead loads.

Strength of floors.

Every floor shall be of sufficient strength to bear safely the weight to be imposed thereon in addition to the weight of the materials of which the floor is composed;

If to be used as a dwelling house, apartment house, apartment-hotel, tenement house, hotel, or lodging house, each floor shall be of sufficient strength in all its parts to bear safely upon every superficial foot of its surface not less than sixty pounds; For dwellings, apartments, tenements, hotels, lodging houses.

If to be used for office purposes not less than seventy-five pounds upon every superficial foot above the first floor, and for the latter floor one hundred and fifty pounds; For office buildings.

If to be used as a school or place of instruction, not less than seventy-five pounds upon every superficial foot; For school buildings.

If to be used for stable and carriage house purposes, not less than seventy-five pounds upon every superficial foot; For stables and carriage houses.

If to be used as a place of public assembly, not less than ninety pounds upon every superficial foot; For public assembly buildings.

If to be used for ordinary stores, light manufacturing and light storage, not less than one hundred and twenty pounds upon every superficial foot; For ordinary stores, light manufactory, light storage buildings.

If to be used as a store where heavy materials are kept or stored, warehouse, factory or for any other manufacturing or commercial purpose, not less than one hundred and fifty pounds upon every superficial foot. For heavy stores, warehouses, factories.

The strength of factory floors intended to carry running machinery shall be increased above the minimum given in this Section in proportion to the degree of vibratory impulse liable to be transmitted to the floor, as may be required by the Commissioner of Buildings. When running machinery is used.

The roofs of all buildings having a pitch of less than twenty degrees shall be proportioned to bear safely fifty pounds upon every superficial foot of their surface, in addition to the weight of materials composing the same. If the pitch be more than twenty degrees the live load Roof loads.

shall be assumed at thirty pounds upon every superficial foot measured on a horizontal plane.

Sidewalks, live load for.

For sidewalks between the curb and area lines the live load shall be taken at three hundred pounds upon every superficial foot.

Vertical Supports.

Bearing strength for vertical supports.

Every column, post or other vertical support shall be of sufficient strength to bear safely the weight of the portion of each and every floor depending upon it for support, in addition to the weight required as before stated to be supported safely upon said portions of said floors.

Reduction in Live Loads on Columns.

Permissible in certain buildings over five stories in height.

For the purpose of determining the carrying capacity of columns in dwellings, office buildings, stores, stables and public buildings when over five stories in height, a reduction of the live loads shall be permissible as follows:

Roof and top floor full live load.

For the roof and top floor the full live loads shall be used;

Lower floors reduced until 50 per cent. of live load is reached.

For each succeeding lower floor it shall be permissible to reduce the live load by five per cent. until fifty per cent. of the live loads fixed by this Section is reached, when such reduced loads shall be used for all remaining floors.

SECTION 130.

Load on Floors To Be Distributed.

The weight placed on any of the floors of any building shall be safely distributed thereon.

The Commissioner of Buildings may require the owner or occupant of any building, or of any portion thereof, to re-distribute the load on any floor, or to lighten such load, where he deems it to be necessary. Re-distributing loads.

SECTION 131.

Strength of Existing Floors To Be Calculated.

In all warehouses, storehouses, factories, workshops, and stores where heavy materials are kept or stored, or machinery introduced, the weight that each floor will safely sustain upon each superficial foot thereof, or upon each varying part of such floor, shall be estimated by the owner or occupant, or by a competent person employed by the owner or occupant. In warehouses, factories and heavy stores.

Such estimate shall be reduced to writing, on printed forms furnished by the Department of Buildings, stating the material, size, distance apart and span of beams and girders, posts or columns to support floors, and its correctness shall be sworn to by the person making the same, Estimated strength to be sworn to.

And it shall thereupon be filed in the office of the Department of Buildings. To be filed.

But if the Commissioner of Buildings shall have cause to doubt the correctness of said estimate, he is empowered to revise and correct the same, and for the purpose of such revision the officers and employes of the Department of Buildings may enter any building and remove so much of any floor or other portion thereof as may be required to make necessary measurements and examinations. Commissioner of Buildings may correct any filed estimate of strength.

When the correct estimate of the weight that the floors in any such buildings will safely sustain has been ascertained, as herein provided, the Commissioner of Buildings shall approve the same, Approval of correct estimates of strength.

Floors and varying parts of floors.

And thereupon the owner or occupant of said building, or of any portion thereof, shall post a copy of such approved estimate in a conspicuous place on each story, or varying parts of each story, of the building to which it relates.

Strength of floors in new buildings to be posted before occupancy.

Before any building hereafter erected is occupied and used, in whole or in part, for any of the purposes aforesaid, and before any building, erected prior to the passage of this Code, but not at such time occupied for any of the aforesaid purposes, is occupied or used, in whole or in part, for any of said purposes, the weight that each floor will safely sustain upon each superficial foot thereof, shall be ascertained and posted in a conspicuous place on each story or varying parts of each story of the building to which it relates.

Forbidding excessive loads on floors.

No person shall place, or cause or permit to be placed on any floor of any building any greater load than the safe load thereof, as correctly estimated and ascertained as herein provided.

Expense For Examining Into Strength of Floors.

Any expense necessarily incurred in removing any floor or other portion of any building for the purpose of making any examination herein provided for shall be paid by the City Treasurer of the City of..... upon the requisition of the Commissioner of Buildings, out of the fund paid over to said board under the provisions of Section 160 of this Code. Such expenses shall be a charge against the person or persons by whom or on whose behalf said estimate was made, provided such examination proves the floor of insufficient strength to carry with safety the loads found upon them when such examination was made; and shall be collected in an action to be brought by the City Attorney

If found of insufficient strength.

against said person or persons, and the sum so collected shall be paid over to the said Treasurer to be deposited in said fund in reimbursement of the amount paid as aforesaid.

Floor Calculations Filed With Application To Build.

When the owner or the architect of record for any building has filed with his application to build the data required to determine the strength of floors, on one of the blank forms provided for that purpose, such examination shall not be required provided that the purposes and uses of the building have not been changed. Examination not required.

SECTION 132.

Strength of Temporary Supports.

Every temporary support placed under any structure, wall, girder or beam, during the erection, finishing, alteration, or repairing of any building or structure or any part thereof, shall be of sufficient strength to safely carry the load to be placed thereon. During erection or alteration of any building.

During the construction or alteration of any building or structure no material entering into such construction or alteration shall be placed on any floor of any greater weight than the live load that each such floor is intended to safely sustain when the building or structure is completed. Forbidding loads on any floor in excess of safe live load

PART XXIII.

CALCULATIONS—STRENGTH OF MATERIALS.

SECTION 133.

Safe Load for Masonry Work.

The safe-bearing load to apply to brickwork shall be taken at— Brickwork.

Brick laid with lime mortar.

Eight tons per superficial foot when lime mortar is used;

Brick laid with lime and cement mortar.

Eleven and one-half half tons per superficial foot when lime and cement mortar mixed is used;

Brick laid with cement mortar.

Fifteen tons per superficial foot when cement mortar is used.

Rubble-Stone Work.

The safe-bearing load to apply to rubble-stone work shall be taken at—

When Portland cement is used.

Ten tons per superficial foot when Portland cement is used;

When cement other than Portland is used.

When cement other than Portland is used, eight tons per superficial foot;

When lime and cement mortar mixed is used.

When lime and cement mortar mixed is used, seven tons per superficial foot;

When lime mortar is used.

And when lime mortar is used, five tons per superficial foot.

Concrete.

The safe-bearing load to apply to concrete—

When Portland cement is used.

When Portland cement is used shall be taken at fifteen tons per superficial foot;

When cement other than Portland is used.

And when cement other than Portland is used, eight tons per superficial foot.

SECTION 134.

Weights of Certain Materials.

In computing the weight of walls,

A cubic foot of brickwork shall be deemed to weigh one hundred and fifteen pounds. Brickwork, weight of.

Sandstone, white marble, granite and other kinds of building stone shall be deemed to weigh one hundred and seventy pounds per cubic foot. Stone, weight of.

SECTION 135.

Computations for Strength of Materials.

The dimensions of each piece or combination of materials required shall be ascertained by computation, according to the rules prescribed by this Code. To be ascertained by rules in Code.

SECTION 136.

Factors of Safety.

Where the unit stress for any material is not prescribed in this Code the relation of allowable unit stress to ultimate strength shall be— When not prescribed.

As one to four for metals, subjected to tension or transverse stress; For metals.

As one to six for timber, For timber.

And as one to ten for natural or artificial stones and brick or stone masonry. For masonry work.

But wherever working stresses are prescribed in this Code, varying the factors of safety herein above given, the said working stresses shall be used. Working stresses prescribed by Code.

SECTION 137.

Strength of Columns.

In columns or compression members with flat ends of cast iron, steel, wrought iron or wood, the stress per square inch shall not exceed that given in the following tables:

When the length divided by least radius of gyration equals	Working stresses per square inch of section		
	Cast iron.	Steel.	Wrought iron.
120	.....	8,240	4,400
110	.....	8,820	5,200
100	.....	9,400	6,000
90	.....	9,980	6,800
80	.....	10,560	7,600
70	9,200	11,104	8,400
60	9,500	11,720	9,200
50	9,800	12,300	10,000
40	10,100	12,880	10,800
30	10,400	13,460	11,600
20	10,700	14,040	12,400
10	11,000	14,620	13,200

And in like proportion for intermediate ratios.

When the length divided by the least diameter equals	Working stress per square inch of section		
	Long leaf yellow pine.	White pine, Norway pine, spruce.	Oak.
30	460	350	390
25	550	425	475
20	640	500	560
15	730	575	645
12	784	620	696
10	820	650	730

And in like proportion for intermediate ratios. Five-eighths the values given for white pine shall also apply to chestnut and hemlock posts.

For locust posts use one and one-half the value given for white pine.

EXAMPLES.

What will be the safe load for a yellow-pine post 10″ × 10″—10 feet in length ?

$$\frac{\text{Length in ins.}}{\text{least diameter.}} = \frac{120}{10} = 12,$$ for which the working stress per square inch of section in the above table is 784

The sectional area of a 10″ × 10″ post is 100 square inches.

Therefore 100 (Sectional area.) × 784 (Working stress.) = 78,400 lbs., or 39.2 tons, safe load.

What will be the safe load for a yellow-pine post 8″ × 10″—10 feet in length ?

$$\frac{\text{Length in ins.}}{\text{least diameter.}} = \frac{120}{8} = 15,$$ for which the working stress per square inch of section in the above table is 730.

The sectional area of an 8″ × 10″ post is 80 square inches.

Therefore 80 (Sectional area.) × 730 (Working stress.) = 58,400 lbs., or 29.2 tons, safe load.

What will be the safe load for a round yellow-pine column 10″ diameter—10 feet in length ?

$$\frac{\text{Length in ins.}}{\text{least diameter.}} = \frac{120}{10} = 12,$$ for which the working stress per square inch of section in the above table is 784.

The section area of a 10″ round column is 78.54 square inches.

Therefore 78.54 (Sectional area.) × 784 (Working stress.) = 61,575 lbs., or 30.79 tons, safe load.

Columns and compression members shall not be used having an unsupported length of greater ratios than given in the tables.

Columns Eccentrically Loaded.

Any column eccentrically loaded shall have the stresses caused by such eccentricity computed, and the combined stresses resulting from such eccentricity at any part of the column, added to all other stresses at that part, shall in no case exceed the working stresses stated in this Code.

The eccentric load of a column shall be considered to be distributed equally over the entire area of that column at the next point below at which the column is securely braced laterally in the direction of the eccentricity.

SECTION 138.

Working Stresses.

The safe carrying capacity of the various materials of construction (except in the case of columns) shall be determined by the following working stresses in pounds per square inch of sectional area:

Compression (Direct).

Rolled steel	16,000
Cast steel	16,000
Wrought iron	12,000
Cast iron (in short blocks)	16,000
Steel pins and rivets (bearing)	20,000
Wrought iron pins and rivets (bearing)	15,000

	With Grain.	Across Grain.
Oak	900	800
Yellow pine	1,000	600
White pine	800	400
Spruce	800	400
Locust	1,200	1,000
Hemlock	500	500
Chestnut	500	1,000
Concrete (Portland) cement, 1; sand, 2; stone, 4		230
Concrete (Portland) cement, 1; sand, 2; stone, 5		208
Concrete, Rosendale, or equal, cement, 1; sand, 2; stone, 4		125
Concrete, Rosendale, or equal, cement, 1; sand, 2; stone, 5		111
Rubble stonework in Portland cement mortar		140
" " " Rosendale cement mortar		111
" " " lime and cement mortar		97
" " " lime mortar		70
Brickwork in Portland cement mortar; cement, 1; sand, 3		250
Brickwork in Rosendale, or equal, cement mortar; cement, 1; sand, 3		208
Brickwork in lime and cement mortar; cement, 1; lime, 1; sand 6		160
Brickwork in lime mortar; lime, 1; sand, 4		111
Granites (according to test)	1,000 to	2,400
Gneiss stone		1,200
Limestones (according to test)	700 to	2,300
Marbles (according to test)	600 to	1,200
Sandstones (according to test)	400 to	1,600
Bluestone		2,000
Brick (hard-burned, flatwise)		300
Slate		1,000

Tension (Direct).

Rolled Steel	16,000
Cast Steel	16,000
Wrought Iron	12,000
Cast Iron	3,000
Yellow Pine	1,200
White Pine	800
Spruce	800
Oak	1,000
Hemlock	600

Shear.

Steel Web Plates	9,000
" Shop Rivets and Pins	10,000
" Field Rivets	8,000
" Field Bolts	7,000
Wrought Iron Web Plates	6,000
" " Shop Rivets and Pins	7,500
" " Field "	6,000
" " " Bolts	5,500
Cast Iron	3,000

	With Fibre.	Across Fibre.
Yellow pine	70	500
White pine	40	250
Spruce	50	320
Oak	100	600
Locust	100	720
Hemlock	40	275
Chestnut	..	150

Safe Extreme Fibre Stress (Bending).

Rolled Steel Beams	16,000
Rolled Steel Pins, Rivets and Bolts	20,000
Riveted Steel Beams (Net Flange Section)	14,000
Rolled Wrought Iron Beams	12,000
Rolled Wrought Iron Pins, Rivets and Bolts	15,000
Riveted Wrought Iron Beams (Net Flange Section)	12,000
Cast Iron Compression Side	16,000
Cast Iron Tension Side	3,000
Yellow Pine	1,200
White Pine	800
Spruce	800
Oak	1,000
Locust	1,200
Hemlock	600
Chestnut	800
Granite	180
Gneiss stone	150
Limestone	150
Slate	400
Marble	120
Sandstone	100
Bluestone	300
Concrete (Portland) Cement, 1; Sand, 2; Stone, 4	30
Concrete (Portland) Cement, 1; Sand, 2; Stone, 5	20
Concrete (Rosendale, or equal) Cement, 1; Sand, 2; Stone, 4	16
Concrete (Rosendale, or equal) Cement, 1; Sand, 2; Stone, 5	10
Brick (hard-burned)	50
Brickwork (in Cement)	30

SECTION 139.

Wind Pressure.

Exposed surfaces.

All structures exposed to wind shall be designed to resist a horizontal wind pressure of thirty pounds for every square foot of surface thus exposed, from the ground to the top of same, including roof, in any direction.

Stability.

In no case shall the overturning moment due to wind pressure exceed seventy-five per centum of the moment of stability of the structure.

Bracing introduced when necessary.

In all structures exposed to wind, if the resisting moments of the ordinary materials of construction, such as masonry, partitions, floors and connections, are not sufficient to resist the moment of distortion due to wind pressure, taken in any direction on any part of the structure, additional bracing shall be introduced sufficient to make up the difference in the moments.

Working stresses may be increased.

In calculations for wind bracing, the working stresses set forth in this Code may be increased by fifty per centum.

When wind pressure may be disregarded.

In buildings under one hundred feet in height, provided the height does not exceed four times the average width of the base, the wind pressure may be disregarded.

PART XXIV.

PUBLIC BUILDINGS, THEATRES AND PLACES OF ASSEMBLAGE.

SECTION 140.

Public Buildings.

In all public buildings or buildings of a public character—

Such as hotels, churches, theatres, restaurants, railroad depots, public halls, and other buildings used or intended to be used for purposes of public assembly, amusement or instruction, and including department stores and other business and manufacturing buildings where large numbers of people are congregated, the halls, doors, stairways, seats, passageways and aisles, and all lighting and heating appliances and apparatus shall be arranged as the Commissioner of Buildings shall direct to facilitate egress in cases of fire or accident, and to afford the requisite and proper accommodation for the public protection in such cases.

Specifically named buildings.

Including business and manufacturing buildings.

Egress from and lighting and heating appliances in.

All aisles and passageways in said buildings shall be kept free from camp-stools, chairs, sofas and other obstructions, and no person other than an employe or policeman or fireman shall be allowed to stand in or occupy any of said aisles or passageways, during any performance, service, exhibition, lecture, concert, ball or any public assemblage.

Passageways to be kept free from obstruction.

Policemen, firemen, etc.

The Commissioner of Buildings may at any time serve a written or printed notice upon the owner, lessee or manager of any of said buildings, directing any act or thing to be done or provided in or about the said buildings and the several appliances therewith connected, such as halls, doors, stairs, windows, seats, aisles, fire-walls, fire apparatus and fire-escapes, as he may deem necessary.

Requirements for public security.

Theatres Existing Prior to the Passage of This Ordinance.

Nothing herein contained shall be construed to authorize or require any other alterations to theatres existing prior to the date of this Code than are specified in this Section.

Limiting requirements.

SECTION 141.

Theatres and Places of Public Amusement.

To be built in accordance with this section.

Every theatre or opera house, or other building intended to be used for theatrical or operatic purposes, or for public resort or entertainments of any kind, hereafter erected, for the accommodation of more than three hundred persons, shall be built to comply with the requirements of this Section.

When not in conformity with this section, not to be used.

No building, which at the time of the passage of this Code, is not in actual use for theatrical or operatic purposes, and no building hereafter erected not in conformity with the requirements of this Section, shall be used for theatrical or operatic purposes, or for public entertainments of any kind, until the same shall have been made to conform to the requirements of this Section.

Approval to be obtained before opening to the public.

No building hereinbefore described shall be opened to the public for theatrical or operatic purposes, or for public entertainments of any kind, until the Commissioner of Buildings shall have approved the same in writing as conforming to the requirements of this Section, nor until the Commissioner of the Fire Department shall have certified in writing that all the appliances for the extinguishing of fire or guarding against the same conform to this Code and to the special requirements of this Section and are in a complete and satisfactory working condition.

Street frontage.

Every such building shall have at least one front on the street, and in such front there shall be suitable means of entrance and exit for the audience.

Open spaces.

In addition to the aforesaid entrances and exits on the street, there shall be reserved for service in case of an emergency, an open court or space on the side not bordering on the street, where said building is located

on a corner lot; and on both sides of said building, where there is but one frontage on the street. The width of such open court or courts shall be not less than seven feet where the seating capacity does not exceed one thousand people, exceeding one thousand and not more than eighteen hundred people, eight feet in width, and exceeding eighteen hundred people, ten feet in width. Said open court or courts shall begin on a line with or near the proscenium wall and shall extend the length of the auditorium proper, to or near the wall separating the same from the entrance lobby or vestibule.

Width for open courts.

A separate and distinct corridor shall continue to the street, from each open court, through such superstructure as may be built on the street side of the auditorium, with continuous walls of brick or fireproof materials on each side the entire length of said corridor or corridors, and the ceiling and floors shall be fireproof. Said corridor or corridors shall not be reduced in width to more than three feet less than the width of the open court or courts, and there shall be no projection in the same; the outer openings to be provided with doors or gates opening toward the street. During the performance the doors or gates in the corridors shall be kept open by proper fastenings; at other times they may be closed and fastened by movable bolts or latches.

Corridors to street.

Doors and gates kept open during performances.

The said open courts and corridors shall not be used for storage purposes, or for any purpose whatsoever except for exit and entrance from and to the auditorium and stage, and must be kept free and clear during performances.

Courts and corridors kept clear from obstruction.

The level of said corridors shall be graded to the sidewalk and made flush therewith at all points at the street entrances.

Level of corridors above sidewalk.

The entrance of the main front of the building shall not be on a higher level from the sidewalk than four

Level for main entrance.

steps, but this shall not preclude the use of an additional number of steps at the street entrances to the sides or rear of the building, as may be necessary to overcome the difference in grades of sidewalks.

Gradients.

To overcome any difference of level in and between courts, corridors, lobbies, passages and aisles on the ground floor, gradients shall be employed of not over one foot in twelve feet with no perpendicular rises.

Exits from auditorium into side courts.

From the auditorium opening into the said open courts, or on the side street, there shall be not less than two exits on each side in each tier from and including the parquet and each and every gallery. Each exit shall

Width of exits.

be at least five feet in width in the clear and provided with fire-doors constructed as hereinbefore in this

Doors.

Code described for fireproof doors. All of said doors shall open outwardly, and shall be fastened with movable bolts, the bolts to be kept drawn during performances.

Fire escape balconies and staircases.

There shall be balconies not less than four feet in width in the said open court or courts at each level or tier above the parquet, on each side of the auditorium, of sufficient length to embrace the two exits, and from said balconies there shall be staircases extending to the ground level, with a rise of not over eight and one-half inches to a step, and not less than nine inches tread exclusive of the nosing. The staircase from the upper balcony to the next below shall be not less than thirty

Width of staircases in open courts.

inches in width in the clear, and from the first balcony to the ground three feet in width in the clear, where the seating capacity of the auditorium is for one thousand people or less, three feet and six inches in the clear where exceeding one thousand and not more than eighteen hundred people, four feet in the clear where exceeding eighteen hundred people and not more than twenty-five hundred people, and four feet six inches

in the clear where the seating capacity is more than twenty-five hundred people. All the beforementioned balconies and staircases shall be constructed of wrought iron or steel throughout, except that the treads may be of cast iron, and be of ample strength to sustain the load to be carried by them, and they shall be covered with a metal hood or awning, to be constructed in such manner as shall be approved by the Commissioner of Buildings.

Metal awnings over outside balconies and staircases.

Where one side of the building borders on a street, there shall be balconies and staircases of like capacity and kind, as beforementioned, carried to the ground.

Balconies and staircases in side street.

When located on a corner lot that portion of the premises bordering on the side street and not required for the uses of the theatre may, if such portion be of fireproof construction, and not more than twenty-five feet average width, be used for offices, stores or apartments, provided the walls separating this portion from the theatre proper are carried up solidly to and through the roof, and that an exit is provided for the theatre, on each tier, equal to the combined width of exits opening on opposite sides in each tier, communicating with balconies and staircases leading to the street in the manner provided elsewhere in this Section.

Corner building, a portion may be used for business purposes.

Nothing herein contained shall prevent a roof garden, art gallery, or rooms for similar purposes being placed above a theatre or public building, provided the floor of the same forming the roof over such theatre or building shall be constructed of iron or steel and fireproof materials, and that said floor shall have no covering boards or sleepers of wood, but be of tile or cement. Every roof over said garden or rooms shall have all supports and rafters of iron or steel, and be covered with glass or fireproof materials, or both, but no such roof garden, art gallery or room for any public purpose

Permitting roof to be used for a garden, etc.

Roof over garden.

shall be placed over or above that portion of any theatre or other building which is used as a stage.

Workshops, storage and property rooms, location for.

No workshop, storage or general property room shall be allowed above the auditorium or stage, or under the same, or in any of the fly galleries, unless all of such rooms or shops are located in the rear of or at the side of the stage, and in such cases they shall be separated from the stage by a brick wall not less than twelve inches in thickness, and the openings leading into said portions shall have self-closing standard fire-doors.

Use of theatre building for other purposes prohibited

No portion of any building hereafter erected or altered, used or intended to be used for theatrical or other purposes as in this Section specified, shall be occupied or used as a hotel, boarding or lodging house, factory, workshop or manufactory, or for storage purposes, except as may be hereafter specially provided for. Said restriction relates not only to that portion of the building which contains the auditorium and the stage, but applies also to the entire structure in conjunction therewith.

Specially hazardous business prohibited.

No store or room contained in the building, or the offices, stores or apartments adjoining, as aforesaid, shall be let or used for carrying on any business dealing in any article or material dangerous to life, except under such conditions as may be prescribed by the Fire Department, under authority of a written permit issued by said Department, or for manufacturing purposes.

Lodging quarters prohibited.

No lodging accommodations shall be allowed in any part of the building communicating with the auditorium.

Interior walls.

Interior walls built of fireproof materials shall separate the auditorium from the entrance vestibule, and from any room or rooms over the same, also from any lobbies, corridors, refreshment or other rooms; and in

all such walls the window and door frames and all sash and doors shall be fireproof; the window frames and sash shall be of metal of standard construction, and the sash made stationary and glazed with wired glass not less than one-quarter inch in thickness, and each pane or unit measuring not more than twenty-four by thirty inches; the doors shall be made to close automatically and be of standard pattern and make in every respect.

Inclosure of staircases.

All staircases for the use of the audience shall be inclosed with walls of brick, or of fireproof materials approved by the Commissioner of Buildings, in the stories through which they pass, and the openings to said staircases from each tier shall be the full width of staircase. No door shall open immediately upon a flight of stairs, but a landing at least the width of the door shall be provided between such stairs and such door.

Proscenium wall.

A fire-wall, built of brick, not less than twelve inches in any portion of same shall separate the auditorium from the stage, and the same shall extend at least four feet above the stage roof, or the auditorium roof, if the latter be the higher, and shall be coped.

Iron girder above proscenium opening.

Above the proscenium opening there shall be an iron girder of sufficient strength to safely support the load above and the same shall be covered with fireproof material not less than four inches in thickness.

Orchestra, when placed above the stage.

Should there be constructed an orchestra over the stage, above the proscenium opening, the said orchestra shall be placed on the auditorium side of the proscenium fire-wall, and shall be entered only from the auditorium side of said wall.

Proscenium frame.

The molded frame around the proscenium opening shall be formed entirely of fireproof materials; if metal be used, the metal shall be filled in solid with non-com-

bustible material and securely anchored to the wall with iron.

Curtain for proscenium opening.

The proscenium opening shall be provided with a fireproof metal curtain, or a curtain of asbestos, or other fireproof material approved by the Commissioner of Buildings, overlapping the brick proscenium wall at each side not less than twelve inches, and sliding vertically at each side within iron grooves or channels to a depth of not less than twelve inches, said grooves or channels to be securely bolted to the brick wall and extend to a height of not less than three feet above the top of the curtain when raised to its full limit. Said fireproof curtain shall be raised at the commencement of each performance, lowered between each act, and lowered at the close of said performance, and be operated by approved machinery for that purpose. If the proscenium curtain be of asbestos, that material shall be reinforced with wire or wire spun in the asbestos, and at the bottom of the curtain shall be placed a rigid metallic rod or bar of proper weight, securely fastened to the curtain and covered over with like material as the curtain itself, to carry down the curtain by the weight of the said rod or bar when released. The excess weight of the curtain is to be overcome by a check-rope of cotton or hemp, extending to the floor on both sides of the stage, so that the cutting or burning of which will release the curtain and the same will then descend at its normal rate of speed. The proscenium curtain shall be placed at the nearest point at least three feet distant from the footlights.

Raising and lowering of curtain.

Weight for curtain.

Doorways in proscenium wall.

No doorway or opening through the proscenium wall, from the auditorium, shall be allowed above the level of the first floor, and such first floor openings shall have self-closing standard fire-doors at each side of the wall, and openings, if any, below the stage shall

each have a self-closing standard fire-door, and all of the said doors shall be hung so as to be opened from either side of the wall at all times.

Skylights over stage.

There shall be provided over the stage metal skylights, of an area or combined area of at least one-twelfth of the area of said stage, fitted with rolling sash and glazed with glass not exceeding one-eighth of an inch thick, and each pane thereof measuring not less than three hundred square inches.

The rolling sash shall be fitted with brass wheels not less than two and one-half inches in diameter, and latter shall roll on brass tracks extending the entire length of the sash. The portion of the tracks extending from the edge of the curb of the skylight to the end of the incline may be made of iron.

These skylights shall be set on curbs, so that the lowest portion of the tracks upon which they slide shall be not less than twelve inches above the roof.

The whole of which skylight shall be so constructed as to open instantly on the cutting or burning of a hempen cord, which shall be arranged to hold said skylights closed, or some other equally simple approved automatic device for opening them may be provided. Immediately underneath the glass of said skylights there shall be wire netting, but wire glass shall not be used in lieu of this requirement.

Shaft for escape of smoke at top of roof over stage.

The roof over the stage shall be provided with a shaft of galvanized iron extending from the ceiling line up through and at least four feet above the roof and have a raised cover at the top for the escape of smoke. The least inside diameter, or the least horizontal measurement if the shaft be of other shape than circular, shall be forty-eight inches. At the bottom of this shaft, on a plane with the ceiling, shall be a galvanized sheet iron door in two parts, each part separately hinged and kept closed by fusible links, so

that in case of fire the doors will instantly open downwards by their own weight.

Stage floor.

All that portion of the stage not comprised in the working of scenery, traps and other mechanical apparatus, for the presentation of a scene, usually equal to the width of the proscenium opening, shall be built of iron or steel beams filled in between with fireproof material, and all girders for the support of said beams shall be of wrought iron or rolled steel.

Tie-galleries and fly-galleries, construction of.

The fly-galleries and the tie-galleries entire, including pin-rails, shall be constructed of iron or steel, and the floors of said galleries shall be composed of iron or steel beams, filled in with fireproof materials, and no wood boards or sleepers shall be used as covering over beams, but the said floors shall be entirely fireproof.

Gridiron floor.

The gridiron or rigging loft shall have a lattice iron floor, and be readily accessible by iron stairways.

Stage scenery.

All stage scenery, curtains and decorations made of combustible material, and all woodwork on or about the stage, shall be painted or saturated with some non-combustible material, or otherwise rendered safe against fire,

Finishing coats of paint, fire-resisting kind.

And the finishing coats of paint applied to all woodwork throughout the entire building shall be of such kind as will resist fire to the satisfaction of the Commissioner of Buildings.

Roofs, floors and galleries, fireproof.

The roof over the auditorium and the entire main floor of the auditorium and vestibule, also the entire superstructure over the entrance, lobby and corridors, and all galleries and supports for the same in the auditorium, shall be constructed of iron or steel and fireproof materials, not excluding the use of wood floor boards and necessary sleepers to fasten the same to, but such sleepers shall not

mean timbers of support, and the space between the sleepers, excepting the portion under the stepping in the galleries, which shall be properly fire-stopped, shall be solidly filled with incombustible material up to the under side of the floor boards.

Gallery fronts.

The fronts of each gallery shall be entirely formed of fireproof materials, except the capping, which may be made of wood.

Ceilings under galleries.

The ceiling under each gallery shall be entirely formed of fireproof materials.

Ceiling of auditorium.

The ceiling of the auditorium shall be formed of fireproof materials.

Metal lathing.

All lathing, whenever used, shall be of wire or other metal on metal studding.

Partitions and furrings to be fireproof.

The partitions in that portion of the building which contains the auditorium, the entrance and vestibule and every room and passage devoted to the use of the audience, shall be constructed of fireproof materials, including the furring of outside or other walls.

Wood sheathing, canvas, etc., prohibited.

None of the walls or ceilings shall be covered with wood sheathing, wood wainscoting, canvas, or any combustible material.

Orchestra sounding board.

But this shall not preclude the construction of a wood sounding board over orchestra pit when the same extends back of and below the overhang of the stage, provided the said wood sheathing be properly fire-stopped by a twelve-inch brick wall back of same, and also have a proper fireproof construction directly under the overhang of the stage extending from the brick wall to the apron of the stage.

Actors' dressing rooms.

Actors' dressing rooms shall not be placed on the stage, under the stage, over the stage, on the fly-galleries, nor under the auditorium, but shall be placed in a separate section provided for that purpose.

Dressing room partition.

The walls separating said section containing the

actors' dressing rooms from the stage shall be not less than twelve inches in thickness, and the openings therefrom to stage shall be protected with standard self-closing fire-doors. The partitions dividing the dressing rooms, together with the partitions of every passageway from the same to the stage, and all other partitions on or about the sides of the stage, or fireproof portion thereof, shall be constructed of fireproof material not less than four inches in thickness approved by the Commissioner of Buildings. All doors in any of said partitions shall be standard fire-doors.

Fireproof doors.

Exits for dressing rooms.

All dressing rooms shall have an independent exit leading directly into a court or street, and shall be ventilated by windows in the external wall.

Cupboards and shelving.

All shelving and cupboards in each and every dressing room, property room or other storage rooms, shall be constructed of metal, slate or some fireproof material.

Windows to open.

All windows where accessible, except as in this Section otherwise specified, shall be arranged to open.

Fixed sash and grills prohibited.

None of the windows in outside walls shall have fixed sashes, fixed iron grills or bars; these may be arranged to hinge and lock, but must be left unlocked during performances.

Seats in auditorium.

All seats in the auditorium excepting those contained in boxes, shall be not less than thirty-two inches from back to back, measured in a horizontal direction, and firmly secured to the floor. No seat in the auditorium shall have more than six seats intervening between it and an aisle, on either side.

Stools or seats in aisles.

No stool or seat shall be placed in any aisle.

Platforms in galleries.

All platforms in galleries formed to receive the seats shall be not more than twenty-four inches in height of riser, nor less than thirty-two inches in width of platform.

Aisles in Auditorium.

All aisles on the respective floors in the auditorium, having seats on both sides of same, shall be not less than three feet wide where they begin, and shall be increased in width toward the exits in the ratio of one and one-half inches to five running feet. Aisles having seats on one side only, shall be not less than two feet six inches wide at their beginning, and increased in width the same as aisles having seats on both sides.

Capacity of lobbies, etc., for use of audience.

The aggregate capacity of the foyers, lobbies, corridors, passages and rooms for the use of the audience, not including aisle space between seats, shall on each floor or gallery, be sufficient to contain the entire number to be accommodated on said floor or gallery, in the ratio of one hundred and fifty superficial feet of floor room for every one hundred persons.

Gradients in aisles.

Gradients or inclined planes shall be employed instead of steps where possible to overcome slight differences of level in or between aisles, corridors and passages.

Exits, number of, proportioned to size of house.

Every theatre accommodating three hundred persons shall have at least two exits; when accommodating five hundred persons, at least three exits shall be provided; these exits not referring to or including the exits to the open court at the side of the theatre.

Exit doors, width for.

Doorways of exit or entrance for the use of the public shall be not less than five feet in width, not including the fire exit doorways, and for every additional one hundred persons or fraction thereof in excess of five hundred, to be accommodated, an aggregate of twenty inches additional exit width must be provided.

Exit doors to open outwardly.

All doors of exit or entrance shall open outwardly and be hung to swing in such a manner as not to become an obstruction in a passage or corridor, and no such doors shall be closed and locked when the building is open to the public.

Galiery exits and entrances.

Distinct and separate places of exit and entrance shall be provided for each gallery above the first gallery.

Main floor and first gallery may have exits and extrances in common.

A common place of exit and entrance may serve for the main floor of the auditorium and the first gallery, provided its capacity be equal to the aggregate capacity of the outlets from the main floor and the said gallery.

Least width for passage to stairway.

No passage leading to any stairway communicating with any entrance or exit, not including fire exits, shall be less than four feet in width in any part thereof.

Stairways to be fireproof.

All stairs within the building shall be constructed of fireproof material throughout, as is elsewhere in this Code required.

Stairs from balconies and galleries.

Stairs from balconies and galleries shall not communicate with the basement or cellar.

Treads and risers of stairs to be uniform.

All stairs shall have treads of uniform width and risers of uniform height throughout in each flight.

Stairways, number and width of.

No stairways from galleries shall be less than four feet in width. Where accommodation is provided in a gallery for more than one hundred people there shall be at least two stairs extending to the ground arranged on opposite sides of gallery, and for every additional fifty people or fraction thereof in excess of the first one hundred to be accommodated, six inches shall be added to the width proportionately divided between the two flights.

Measurement for width of stairs.

The width of all stairs shall be measured in the clear between hand-rails.

Height for risers, and width of tread of stairs.

In no case shall the risers of any stairs exceed seven and a half inches in height, nor shall the treads, exclusive of nosings, be less than ten and one-half inches wide in straight stairs.

Circular or winding stairs prohibited.

No circular or winding stairs for the use of the public shall be permitted.

Gallery staircases and outlets.

Where the seating capacity is for more than one thousand people, there shall be at least two independent

staircases, with direct exterior outlets provided for each gallery in the auditorium; where there are not more than two galleries, the stairs shall be located on opposite sides of said galleries. Where there are more than two galleries one or more additional staircases shall be provided, the outlets from which shall communicate directly with the principal exit or other exterior outlets. All said staircases shall be of width proportioned to the gallery accommodation as elsewhere herein prescribed. Where the seating capacity is for one thousand people, or less, two direct lines of staircases only shall be required, located on opposite sides of the galleries, and in both cases shall extend from the sidewalk level to the upper gallery, with outlets from each gallery to each of said staircases.

Width of staircases proportioned to gallery accommodation.

At least two independent direct exterior outlets shall be provided for the service of the stage and shall be located on the opposite sides of the same.

Exterior outlets for stage.

All inside stairways leading to the upper galleries of the auditorium shall be inclosed on both sides with walls of fire-proof materials. Stairs leading to the first or lower gallery may be left open on one side, in which case they shall be constructed as herein provided for similar stairs leading from the entrance hall to the main floor of the auditorium. But in no case shall stairs leading to any gallery be left open on both sides.

Inclosing stairways.

When straight stairs return directly on themselves, a landing of the full width of both flights, without any steps, shall be provided. The outer line of landings shall be curved to a radius of not less than two feet, to avoid square angles. Stairs turning at an angle shall have a proper landing without winders introduced at said turn. In stairs, when two side flights connect with one main flight, no winders shall be introduced, and the width of the main flight shall be at least equal to the aggregate

Stairs, landings of.

width of the side flights. All stairs shall have proper landings introduced at convenient distances.

Hand-rails for inclosed stairs.

All inclosed staircases shall have, on both sides, strong hand-rails firmly secured to the wall about three inches distant therefrom and about three feet above the stairs, but said hand-rails shall not run on level platforms and landings where the same are of greater length than the width of the stairs.

Centre hand-rail for wide stairs.

All staircases eight feet and over in width shall be provided with a centre hand-rail of metal, not less than two inches in diameter, placed at a height of about three feet above the centre of the treads, and supported on wrought metal or brass standards of sufficient strength, placed not nearer than four feet nor more than six feet apart, and securely bolted to the treads or risers of stairs, or both, and at the head of each flight of stairs, on each landing, the post or standard shall be at least six feet in height, to which the rail shall be secured.

Steam boilers, location for.

Every steam boiler which may be required for heating or other purposes shall be located outside of the building, either under the sidewalk or in an extension, but in no case under or within any portion of the building used for theatrical purposes, and the space allotted to the same shall be inclosed by walls of masonry on all sides, and the ceiling of such space shall be constructed of fireproof materials. All doorways in said walls connecting with the building shall have standard automatic sliding fire-doors.

Floor registers prohibited.

No floor register for heating, ventilating or other purposes shall be permitted.

Radiators in passageways forbidden.

No coil or radiator shall be placed in any aisle or passageway used as an exit, and thereby reduce the same to less than the width required by this Section;

but all said coils and radiators shall be placed in recesses formed in the wall or partition to receive the same.

Steam pipes near woodwork.

All supply, return or exhaust pipes shall be properly incased where passing through floors or near woodwork.

Standpipes.

Standpipes of not less than four inches in diameter shall be provided with hose connections as follows: One on each side of the auditorium in each tier, one on each side of the stage in each tier, one within ten feet of the door of the property room, one within ten feet of the door of the carpenter's shop and scenery storage room.

Obstructions.

All of such standpipes and hose connections shall be kept clear of obstructions.

Water supplies.

Said standpipes shall receive their supply of water from at least one of the following sources:

(a) From a gravity tank located over stage roof of not less than five thousand gallons capacity. Gravity tank.

(b) Approved steel pressure tank of not less than five thousand gallons total capacity, located on stage roof or not lower than gridiron floor. Pressure tank.

(c) Automatic fire pump of not less than five hundred gallons capacity per minute. Automatic pump.

(d) From city mains where pressure is not less than twenty-five pounds per square inch at level of highest hose outlet. City mains.

Valves.

Pipes shall be fitted with approved straightway composition gate valves at hose outlets, and the thread of all connections shall be uniform with that in use by the local Fire Department.

Spanners.

One spanner to be located at each hose connection.

Immediate use.

Pipes shall be kept constantly filled with water under pressure and be ready for immediate use at all times.

Siamese connections.

In addition to the requirements contained in this Section, the standpipes shall have a Siamese steamer connection and conform to all other requirements contained in Section 103 of this Code covering standpipe installation.

Hose.

A sufficient quantity of approved linen, cotton rubber lined, or rubber hose not less than two and one-half inches in diameter, in fifty-foot lengths, but not less than fifty feet in total length, shall be kept attached to each hose connection. Hose shall be fitted with washers and equipped with couplings and nozzles, the thread of which shall be uniform with that in use by the local Fire Department.

Separate from sprinklers.

The standpipe equipment above described to be installed independently of and without connection to the automatic sprinkler system required under this Section.

Automatic sprinklers.

A system of automatic sprinklers approved by the Commissioner of Buildings and the Commissioner of the Fire Department shall be installed throughout the entire stage section of the theatre located in the rear of the proscenium wall; this to include under roof, under gridiron, under galleries, under the stage, in all dressing rooms, in all workshops, property and all other rooms and passageways.

Location.

Water supplies.

There shall be an independent water supply to the sprinklers which may consist of any one of the following:

(a) Gravity tank of not less than ten thousand gallons capacity, and elevated not less than twenty-five feet above the highest sprinkler.

(b) Approved steel pressure tank of not less than seven thousand five hundred gallons capacity, located not lower than the highest line of sprinklers.

(c) Direct supply from city water mains where the pressure is sufficient to maintain not less than twenty-five pounds at highest line of sprinklers when same are in operation.

Siamese connection.

In addition to one or more of the above-required supplies, there shall be a Siamese steamer connection placed on the outside of the building at each street front, installed as described in Section 103, and with suitable iron plate with raised letters securely attached to the wall near steamer connection, reading—"Stage Sprinklers."

Pipe sizes.

The location and spacing of sprinkler heads and the schedule of pipe sizes shall conform to the standard recommended by the National Board of Fire Underwriters, which is hereby made a part of the requirements of this Code.

Casks and pails.

There shall be kept in readiness for immediate use one forty-gallon cask filled with water and six fire pails on each side of the stage, under the stage, on each fly gallery, and a supply of fire pails in property and other storerooms and in each workshop; said casks and buckets shall be painted red and lettered—"For Fire Purposes Only."

Extinguishers, axes and hooks.

There shall also be provided six three-gallon approved chemical fire extinguishers, at least four axes, two twenty feet hooks, two fifteen feet hooks and two ten feet hooks on the stage, and such other appliances as may be required by the Commissioner of the Fire Department.

Lights for rooms, passageways, corridors and courts.

Every portion of the building devoted to the uses or accommodation of the public, also all outlets leading to the streets, and including the open courts and corridors, shall be well and properly lighted during every performance and the same shall remain lighted until the entire audience has left the premises.

Exit lights.

There shall be one light within a red globe or lantern, placed over each exit opening, on the auditorium side of the wall.

Independent connections.

Gas mains and electric light wires supplying the building shall have three independent connections as follows: One for the stage, one for the auditorium, excepting the exit lights therein, and the third for the halls, corridors, lobbies, exit lights, including the exit lights in the auditorium, and such other portions of the building used by the audience outside of the auditorium proper.

Control of lights.

All gas and electric lights in the halls, corridors, lobbies and other portions of the building used by the audience, with the exception of the auditorium proper, but including the exit lights therein, shall be controlled by two separate switches or valves, one to be located in the lobby and the other to be so located as to be operated from the outside of the building.

Shutting off gas.

Provision shall be made for shutting off all gas at a point outside of the building.

Appliances for lighting gas jets.

When interior gaslights are not lighted by electricity other suitable appliances, to be approved by the Commissioner of Buildings, shall be provided.

Suspended or bracket lights.

All suspended or bracket lights surrounded by glass, in the auditorium, or in any part of the building devoted to the public, shall be provided with proper wire-netting underneath.

Lights when recessed in walls or ceilings.

No gas or electric light shall be recessed in the walls, woodwork, ceilings, or in any part of the building unless protected by fireproof materials.

Lights to be protected with wire.

All lights in passages and corridors in said buildings, and wherever else deemed necessary by the Commissioner of Buildings, shall be guarded with proper wire network.

Footlights

The footlights when not electric, in addition to the wire network, shall be guarded with a strong wire

guard and chain drawn taut placed not less than two feet distant from said footlights, and the trough containing said footlights shall be formed of and surrounded by fireproof materials.

Border lights.

All border lights shall be constructed according to the best-known methods, and subject to the approval of the Commissioner of Buildings, and shall be suspended for not less than ten feet therefrom by wire rope or iron chain.

Shaft over main chandelier.

All ducts or shafts used for conducting heated air from the main chandelier, or from any other light or lights, shall be constructed of metal and made double, with an air space between, or some other approved fireproof material may be used.

Stage lights.

All stage lights shall have strong metal wire guards or screens, not less than eight inches in diameter, so constructed that any material in contact therewith shall be out of reach of the flames of said stage lights, and such guards or fixtures shall in all cases be soldered to the fixture.

Bridge calcium lights.

The bridge calcium lights at sides of proscenium shall be inclosed in front and on the side by galvanized iron, so that no drop can come in contact with the lights. Electric calciums so-called, are included in the above requirement.

Fire Department to have control over gas, electric lighting, and fire extinguishing apparatus.

The stand-pipes, gas-pipes, electric wires, hose, footlights and all apparatus for the extinguishing of fire or guarding against the same, as in this Section specified, shall be installed to the satisfaction of and be in charge of and under control of the Commissioner of the Fire Department, and the said Commissioner is hereby directed to see that the arrangements in respect thereto are carried out, enforced and maintained.

Diagram of theatre.

A diagram or plan of each tier, gallery or floor, showing distinctly the exits therefrom, each occupying

a space not less than fifteen square inches, shall be printed in black lines in a legible manner on the programme of the performance.

Signs over places of exit.

Every exit shall have over the same on the inside, the word EXIT painted in legible letters not less than eight inches high.

PART XXV.

PLUMBING AND DRAINAGE.

SECTION 142.

Plumbing, Drainage and Repairs Thereto.

To be executed in accordance with regulations.

The drainage and plumbing of all buildings, both public and private, shall be performed in accordance with the rules and regulations of the Department of Buildings, and the Department of Health.

Rules to be published.

Said rules and regulations and any change thereof shall be published in one daily newspaper, to be designated by the Mayor, for eight successive Mondays before the same shall become operative.

Repairs or alterations.

Repairs or alterations of such plumbing or drainage may be made without the filing and approval of drawings and descriptions in the Department of Buildings,

Meaning of repairs or alterations.

But such repairs or alterations shall not be construed to include cases where new vertical or horizontal lines of soil, waste, vent or leader pipes are proposed to be used.

Notice to Department of Buildings.

Notice of such repairs or alterations shall be given to the said Department before the same are commenced in such cases as shall be prescribed by the rules and regulations of the said Department, and the work shall be done in accordance with the said rules and regulations.

Plumbers to Register.

Register name and address.

Once in each year, every employing or master plumber carrying on his trade, business or calling in the city of ....., shall register his name and address at the office of the Department of Buildings in said city under such rules and regulations as the Commissioner of Buildings shall prescribe;

Certificate of registration.

And thereupon he shall be entitled to receive a certificate of such registration from said Commissioner.

Time for registration.

The time for making such registration shall be during the month of March in each year, but this shall not preclude a person from registering and obtaining a certificate of competency at any other time than in the month of March in any year, but he shall also register in the month of March in each year as herein provided.

Registration may be cancelled.

Such registration may be cancelled by the Commissioner of Buildings for a violation of the rules and regulations for the plumbing and drainage of said Department of Buildings, duly adopted and in force pursuant to the provisions of this Section, or whenever the person so registered ceases to be a master or employing plumber, after a hearing had before said Commissioner, and upon a prior notice of not less than ten days, stating the grounds of complaint and served upon the person charged with the violation of the aforesaid rules and regulations.

Unlawful to Carry on Plumbing Business Unless Registered.

Person, corporation or co-partnership.

After this Code takes effect, no person, corporation or co-partnership shall engage in or carry on the trade, business or calling of employing or master plumber in the city of ....., unless the name and address of such person and the president, secretary or treasurer of such corporation and each and every

member of such co-partnership shall have been registered as above provided.

Plumbers' Signs.

Forbidden unless of registered persons, etc.

No person or persons shall expose the sign of "plumber" or "plumbing," or a sign containing words of similar import and meaning, in the city of ....., unless such person, corporation or co-partnership shall have registered and obtained a certificate as herein provided.

Term "Master Plumber" Defined.

Meaning of term.

A master or employing plumber within the meaning of this Code is any person who hires or employs a person or persons to do plumbing work.

Duties of Inspectors of Plumbing.

To ascertain whether master plumbers are registered.

The inspectors of plumbing in the Department of Buildings in addition to their other duties shall ascertain whether the employing or master plumber having charge of the construction, repairing or alteration of any plumbing work performed in the city of .....is registered as herein provided, and if such person is not so registered, then such inspectors shall forthwith report to said Department the name of said plumber.

Restraining Unregistered Plumbers.

Legal proceedings.

The Commissioner of Buildings through the City Attorney may present a petition to a justice of the Supreme Court or to a special term thereof for an order restraining the person so reported from acting as an employing or master plumber until he registers pursuant to the provisions of this Code. Said petition shall state that the said person is engaged in plumbing work as an

employing or master plumber without having so registered, and shall be verified by the inspector making the said report.

To show cause.

Upon the presentation of the petition, the court shall grant an order requiring such plumber to appear before a special term of the Supreme Court on a date therein specified, not less than two, nor more than six days after the granting thereof, to show cause why he should not be permanently enjoined until he has obtained a certificate of registration as herein required. A copy of such petition and order shall be served upon such person not less than twenty-four hours before the return thereof. On the day specified in such order the court before whom the same is returnable, shall hear the proofs of the parties and may, if deemed necessary, take testimony in relation to the allegations of the petition.

Service.

Hearing.

Enjoining plumber until he registers.

If the court is satisfied that such a plumber is practicing without having registered as provided by this Code, an order shall be granted enjoining him from acting as an employing or master plumber, until he has so registered, and obtained a certificate of registration as herein required.

Undertaking

No undertaking shall be required as a condition to the granting or issuing of such injunction order or by reason thereof.

Violation of order to be punished

If after the entry of such order in the county clerk's office in the City of ..... such person shall in violation of such order, practice as an employing or master plumber, he shall be deemed guilty of a criminal contempt of court, and be punishable as for a criminal contempt in the manner provided by the code of civil procedure.

Costs.

In no case shall the Department of Buildings, nor the Commissioner of Buildings, be liable for costs in any

such proceeding, but costs may be allowed against the defendant or defendants in the discretion of the court.

PART XXVI.

BUILDINGS RAISED, LOWERED, ALTERED OR MOVED.

SECTION 143.

Buildings Raised, Lowered, Altered or Moved.

Raising roof from a peak to a flat roof.

Within the fire limits it shall not be lawful for the owner or owners of any brick dwelling house with eight-inch walls or of any wood building already erected that has a peaked roof, to raise the same for the purpose of making a flat roof thereon, unless the same be raised with the same kind of material as the building, and unless such new roof be covered with fireproof material,

Buildings Increased in Height.

Limit of height when raised.

And provided that such building, when so raised, shall not exceed forty feet in height to the highest part thereof.

Must exceed certain height before being raised.

All such buildings must exceed twenty-five feet in height to the peak of the main roof before the said alteration and raising.

Entire area of building may be raised.

In increasing the height of any such building the entire area which such building covers may be raised to a uniform height.

Buildings Enlarged.

Extension may be increased in width and height.

If any such building has an extension of less width than the main building the same may be increased in

width to the full width of the main building, with the same kind of material and to the same height as the main building.

Main building may be extended front and rear.

Any such building may be extended either on the front or rear to a depth of not more than twenty feet and not more than the width of the building, and not more than two stories and basement in height, with the same kind of material as the building.

In a Row of Frame Buildings.

To conform to height of adjoining frame buildings.

Any frame building situated in a row of frame buildings may be increased in height to conform to the height of adjoining buildings.

Where Grade of Street Has Been Altered.

Raising or lowering of buildings to meet grade of street.

If any building shall have been built before the street upon which it is located is graded, or if the grade is altered, such building may be raised or lowered to meet the requirement of such grade.

Increasing height of one-story frame buildings.

The restrictions contained in this Section shall not prohibit one-story and basement frame dwelling houses from being increased one additional story in height.

Frame Buildings Altered For Business Uses.

Limiting height to two stories.

Within the fire limits no frame building more than two stories in height, now used as a dwelling, shall hereafter be raised or altered to be used as a factory, warehouse or stable.

Moving Frame Buildings.

Permit must first be obtained.

No wood building within or without the fire limits shall be moved from one lot to another until a statement setting forth the purpose of said removal and the uses to which said building is to be applied is filed in the Department of Buildings, and a permit be first obtained therefor.

Wood buildings not to be moved from without to within fire limits.

No wood building shall be moved from without to within the fire limits.

Brick Buildings Enlarged or Raised.

Exterior walls to be of incombustible materials.

Within the fire limits no brick building shall be enlarged or built upon unless the exterior walls of said addition or enlargement be constructed of incombustible materials; provided, however, that such brick building may be raised, lowered or altered under the same circumstances, and in the manner provided for in this Section.

PART XXVII.

FIRE LIMITS.

SECTION 144.

Prohibiting erection of frame buildings.

No frame or wood structure shall be built hereafter in the City of ..... within the fire limits, as the said limits now are or from time to time may hereafter be established, except as provided for in Section 145 of this Code, and also excepting grain elevators, coal elevators and pockets, ice houses and exhibition buildings, as provided for in Sections 82 and 83 of this Code.

Exceptions.

[NOTE.—In publishing the Code, after its adoption, the boundary lines of the fire limits if already established should be inserted for the information of those concerned. If newly established as part of this Code, they will be here inserted.]

PART XXVIII.

FRAME BUILDINGS.

SECTION 145.

Frame Structures Within the Fire Limits.

Applies to temporary and permanent structures of wood.

The provisions, in this Section contained, shall apply to buildings and structures, whether temporary or permanent, within the fire limits, as the said fire limits now are or from time to time may hereafter be established.

Temporary Frame Buildings.

For builders' uses.

Temporary one-story frame buildings may be erected for the uses of builders, within the limits of lots whereon buildings are in course of erection, or on adjoining vacant lots, upon permits issued by the Commissioner of Buildings.

Meaning of term.

Temporary structures shall be taken to mean and include platforms, stands, election booths, temporary buildings and circus tents.

Sheds.

Limited height.

Sheds of wood not over fifteen feet high, open on at least one side, with the sides and roof thereof covered with fireproof material, may also be built, but a fence shall not be used as the back or side thereof.

Area allowed.

Such sheds shall not cover an area exceeding 2,500 square feet, except by permission of the Commissioner of Buildings in isolated localities, and under such conditions as the said Commissioner may prescribe.

Fences.

Height for fences.

Fences of wood shall not be erected over ten feet high, above the surface of the ground, and shall be properly supported and braced.

Signs.

Height for signs.

Signs of wood shall not be erected over two feet high on any building, but no sign of wood shall be placed above the front wall or cornice or roof of any building.

Sky signs.

Sky signs, or any device in the nature of an advertisement, announcement or direction constructed of sheet metal or wire fastened to wood frames supported upon or above or attached to any building, shall be deemed to be wood signs.

Material.

If such sky signs shall exceed two feet in height they shall be constructed entirely of metal, including the uprights, supports and braces for same, and shall be not more than nine feet in height above the front wall or cornice or roof of the building or structure to which they are attached or by which they are supported.

Limit of height for sky signs.

Permit required to erect.

Before any wood or metal sign shall be placed in position upon, above or attached to the outside of any building, a permit shall first be obtained from the Commissioner of Buildings.

Safely constructed and placed.

Such sign shall be so constructed, placed and supported as not to be or become dangerous.

Dangerous signs.

All signs which shall be dangerous in any manner whatever, shall be repaired and made safe or taken down by the owner, lessee or occupant of the building.

Bill Boards.

Height for.

No signs or bill boards of wood or metal erected upon uprights or other supports extending into the ground shall be at any point more than ten feet above the surface of the ground, and the same shall be properly supported and braced.

Piazzas and Balconies.

Piazzas or balconies of wood on buildings other than frame buildings which do not exceed eight feet in width, and which do not extend more than three feet above the second-story floor beams, may be erected, provided a permit from the Commissioner of Buildings be granted therefor. On other than frame buildings.

In connected houses such piazzas or balconies may be built, provided the same are open on the front and have brick ends not less than eight inches thick, carried up above the roof of such piazza or balcony, and coped with stone. For connected dwelling houses.

The roofs of all piazzas shall be covered with some fireproof material. Roof covering.

Frame buildings already erected may have placed on any story piazzas, balconies or bay windows of wood, the roofs of which may be covered with the same material as the roof of the main building. On existing frame buildings.

Small Outhouses of Wood.

Exterior privies, and wood or coal-houses, not exceeding one hundred and fifty square feet in superficial area and eight feet high, may be built of wood, but the roofs thereof shall be covered with metal, gravel or slate. Limited in area and height.

SECTION 146.

Frame Buildings Damaged.

Every wood or frame building with a brick or other front within the fire limits, which may hereafter be damaged to an amount not greater than one-half of the value thereof, exclusive of the valuation of the foundation thereof at the time of such damage, may be repaired or rebuilt; When damage is half or less of value.

When damage exceeds one-half.

But if such damage shall amount to more than one-half of such value thereof, exclusive of the value of the foundation, then such building shall not be repaired or rebuilt, but shall be taken down, except as provided in this Code.

To Determine Extent of Damage.

In case the owner of the damaged building shall be dissatisfied with the decision of the Commissioner of Buildings that such building is damaged to a greater extent than one-half of its value, exclusive of the value of the foundation, then the amount and extent of such damage shall be determined upon an examination of the building by three competent persons, one of whom shall be appointed by the Commissioner of Buildings, another of whom shall be appointed by the owner or owners of said premises, and another of whom shall be appointed by the ..... Board of Fire Underwriters, and a decision of a majority of these surveyors reduced to writing and sworn to, shall be conclusive;

By surveyors to be appointed.

And such building shall in no manner be repaired or rebuilt until after such decision shall have been rendered.

SECTION 147.

Frame Buildings Outside of Fire Limits.

Where street system is established.

The provisions of this Section shall apply to frame or other buildings hereafter erected outside of the fire limits, as the same are now or may hereafter be established, in portions of the City of..... where streets are now and where they may hereafter be legally established.

Height for Frame Buildings.

Limit of height.

Three-story frame buildings may be erected to a height not exceeding forty feet, said height being taken from the curb-line, where same exists, at the centre of front or side of building on which main entrance to upper floors is located.

When walls do not adjoin street.

Where the walls of a building do not adjoin the street or building line then the average level of the ground on which the building stands may be taken in place of the curb-line.

Measurement for flat roofs.

Pitched roofs.

The measurement for height shall be to the highest point of roof-beams in case of flat-roof buildings, and to the average height of gable or roof in case of pitched roofs.

Towers, turrets, etc.

Towers, turrets and minarets of wood may be erected to a height not to exceed ten feet greater than the foregoing limited height,

Spires of churches.

Except that the spires of churches may be erected of wood to a height not exceeding seventy-five feet from the ground.

Area for Frame Buildings.

Exceptions.

No frame building hereafter erected for any occupancy other than grain elevators, coal elevators and pockets, ice houses and exhibition buildings, and being not over forty feet in height, shall cover a ground area exceeding the following: One-story building seventy-five hundred square feet, two-story building five thousand square feet and three-story building thirty-five hundred square feet.

Maximum area.

Footings for Frame Buildings.

Width of footings.

All footings or bottom stones shall be at least six inches wider on each side than bottom width of foundation walls above, except where the outside of the foundation wall sets on the property line, in which case six

inches wider on the inside shall be sufficient. The thickness of footings shall be not less than eight inches if of stone, and not less than twelve inches if of concrete.

Thickness of footings.

Foundations for Frame Buildings.

Depth below ground.

Foundations for frame structures shall be laid not less than four feet below the finished surface of the earth, or upon the surface where there is rock bottom, or upon piles or ranging timbers where found necessary.

Foundation Walls for Frame Buildings.

The foundation walls of frame structures exceeding fifteen feet in height—

Of stone.

If of stone, shall be not less than eighteen inches thick,

Of brick.

And if of brick, not less than twelve inches to the grade and eight inches thick to the under side of the sill.

When foundation and first-story walls are of brick.

If the foundation and first story walls are constructed of brick the foundation walls shall be not less than twelve inches thick to the first tier of beams and eight inches thick from first tier to second tier of beams;

When of stone.

Or if these walls are constructed of stone they shall be not less than twenty inches for the foundation wall and eighteen inches for the first story wall;

When stone ashlar is used.

And if the walls are faced with stone ashlar the total thickness shall be four inches greater than in this Section specified.

Recesses in foundation walls.

In the foundation walls there may be recesses not more than eight feet long for stairs, with brick walls not less than eight inches thick.

Chimneys and Flues in Frame Buildings.

Material.

All chimneys in frame buildings shall be built of brick or other fireproof material.

Thickness of brickwork.

The flues shall have walls at least eight inches thick, and be lined with burnt clay pipe, except that the withes or divisions between such flue pipes may be four inches in thickness for the brickwork.

Height for flue linings.

All flue linings shall extend to the top of the chimney.

When chimneys are of stone.

Where chimneys are built of stone the walls of the flues shall be not less than eight inches on all sides, and shall be lined with burnt clay pipe.

Height for chimneys.

All chimneys shall be topped out at least three feet above a flat roof, and at least two feet above the highest point of a peak roof, and be properly capped.

Coping.

Party wall chimneys.

Chimneys in party walls or serving two rooms on the same floor may be built in the walls or partitions;

Independent chimneys.

Elsewhere, they shall be built inside of the frame, except in the case of ornamental or exposed chimneys.

Walls of Frame Buildings.

When outside studs must be filled.

In no case shall a frame building be erected within three feet of the side or rear line of a lot, unless the space between the studs on any such side be filled in solidly with not less than two and one-half inches of brickwork or other fireproof material.

When party wall must be filled

When two or more such buildings are built continuous the party or division studding shall be not less than four inches thick and filled in solidly with brickwork or other fireproof material extending to the under side of roof boards.

When eight-inch brick walls are used.

When the division walls are of brick they shall be not less than eight inches thick above the foundation wall and extending to under side of roof boards, and the ends of the floor beams shall be so staggered or sepa-

rated that not less than four inches of brickwork will be between the beams where they rest on said walls.

Frame Construction.

Sills. The sills of all frame dwellings except where the first floor is used for store or business purposes, shall be not less than two feet above the ground to the under side of same.

Frame. All frame or wood buildings exceeding a height of fifteen feet shall be built with sills, posts, girts, plates and rafters, all of suitable size and properly framed and braced with suitable studs or planks, set at proper distance apart.

Minimum thickness for beams. The floor beams and rafters shall be not less than two inches in thickness.

Roof covering. The covering of roofs may be of shingle, when any such building is separated from any other building by not less than one hundred feet.

Shaft walls. The walls of light, vent and dumb-waiter shafts whether exterior or interior in frame buildings, may be constructed of frame.

Posts and girders in cellars. Posts of hard wood and wood girders may be used instead of brick fore-and-aft partitions in cellars of frame buildings,

Cellar ceilings. And it shall not be necessary to use metal or wire lath for the ceilings of cellars or lowest floors of any frame building.

Cellar stairs. The cellar stairs in frame buildings may be placed directly under main stairs,

Brick inclosure not required. And no brick wall shall be necessary to inclose the same;

Areas. Nor shall areas be required to be built across the front of frame buildings, except where the cellar or basement is used for living purposes.

Fire Stops.

In all frame buildings which are to be lathed and plastered or otherwise sheathed on the inside, the spaces between such parts of the floor joist or beams that rest upon the stud walls or upon partition heads shall be filled in solid for the depth of the joist or beams and between the studs or uprights to the depth of the latter to a height of six inches above the top of the floor joist or beams with suitable incombustible materials. The fire stop shall extend around all the stud walls of the building, supporting the filling material where necessary on strips of wood nailed between studs, and in all stud partitions that rest directly over each other, and thus form a horizontal line of incombustible material to effectually cut off draft openings from story to story through floors, stud walls and partitions.

At ends of beams, in stud walls, and in partitions resting over each other.

Horizontal body of material.

Plumbing, Drainage and Heating of Frame Buildings.

The regulations applying to brick buildings governing plumbing, drainage and heating, also steam and hot air pipes and registers, where same extend through or along stud partitions, shall also apply to frame buildings.

Regulations.

Frame Buildings Altered.

Frame buildings may be altered, extended, raised or repaired, provided the new portions comply with the provisions of this Section.

New portions to comply with requirements of this section.

Occupancy by More Than Six Families.

No frame building shall hereafter be erected exceeding three stories in height to be occupied by more than six families;

Limiting height.

Nor shall any frame building already erected, be altered to more than three stories in height, to be occupied by more than six families.

Limiting occupancy.

Veneered Buildings.

Deemed frame buildings.

Frame buildings veneered on the outside with four inches of brick or stone work shall be deemed frame buildings, but such brick or stone work shall be supported on a continuous foundation of masonry, and shall be properly anchored to the frame structure. The height of any such veneered building shall not exceed two stories and attic above the basement.

Limiting height.

Brick Buildings Outside of Fire Limits.

Reasonable modifications of Code requirements allowed.

Outside of the fire limits, when any brick, stone or concrete building is to be erected of a class that could, under this Code, be constructed of wood, the Commissioner of Buildings is hereby authorized and directed to allow reasonable modifications of this Code relating to brick buildings, in consideration of incombustible material being used for walls instead of wood.

SECTION 148.

Frame Buildings; Where Streets Are Not Established.

Plans and statements.

Within portions of the City of ..... where streets have not been or are not legally established and are outside of the prescribed fire limits, no building or structure, other than small outhouses, shall be erected without first filing plans and a detailed statement of the proposed construction and obtaining an approval, therefor, as provided in Section 4 of this Code.

Frame Hotels, Apartment Houses, Tenement Houses and Assembly Places.

To comply with Code in other respects than being frame buildings.

Within the said portions of the City of ..... hotels, apartment hotels, apartment houses and tenement houses for occupancy by not more than six fami-

lies, and places of public assembly, none of said buildings to exceed three stories or more than forty feet in height, may be built of wood; but shall in all other respects comply with the several provisions of this Code relating to such structures.

Frame Buildings for Ordinary Uses.

Discretionary power.

But for all other buildings or structures only so much of the requirements, regulations and restrictions of this Code shall apply as in the opinion of the Commissioner of Buildings may be necessary for safety and health.

Freedom in Construction, Plumbing and Drainage.

In outlying and undeveloped portions of city.

The purpose of this Section is to permit greater freedom in construction and in plumbing and drainage of buildings in the outlying and undeveloped portions of the City of ..... than in those portions where a street system has been adopted by the Municipality or established by law.

PART XXIX.

COMMISSIONER OF BUILDINGS. — RULES AND REGULATIONS.—RECORD OF APPLICATIONS. — APPEALS AND MODIFICATIONS OF ORDINANCES, ETC.

SECTION 149.

The Commissioner of Buildings.

Power to vary or modify Code.

The Commissioner of Buildings shall have power to vary or modify any of the provisions of this Code or any rule or regulation of the Department of Buildings, relating to the construction, alteration or removal of any building or structure erected or to be erected

Application to be made.

within the City of..... upon an application to him therefor in writing by the owner or lessee of such building or structure, or his duly authorized agent, where there are practical difficulties in the way of carrying out the strict letter of this Code, so that the spirit of this Code shall be observed and public safety secured and substantial justice done; but no such variation or modification shall be granted or allowed unless the particulars of each application and of the decision of the said Commissioner thereon shall be entered upon the records of the Department,

Record to be kept.

Certificate to be issued.

And if the application is granted a certificate therefor shall be issued by the Commissioner of Buildings.

Rules and Regulations.

Power to establish.

The Commissioner of Buildings shall have the power to establish general rules and regulations for the administration of the Department of Buildings; also rules and regulations for the drainage and plumbing of buildings, as prescribed in Section 142 of this Code; and also such other rules and regulations as may be by him deemed advisable or necessary to make in giving full force and effect to the carrying out of the provisions of this Code; and he may amend or repeal such rules and regulations when in his opinion it shall be necessary or desirable.

Amending or repealing.

Record of Applications.

In book form.

The Commissioner of Buildings shall keep a record of all applications presented to him concerning, affecting or relating to the construction, alteration or removal of buildings or other structures. Such record shall include the date of the filing of each such application; the name and address of the owner of the land on which the building or structure mentioned in such application is situated; the names and addresses of the architect and

What to contain.

builder employed thereon; a designation of the premises by street number, or otherwise, sufficient to identify the same; a statement of the nature and proposed use of such structure; and a brief statement of the nature of the application, together with a memorandum of the decision of said Commissioner upon such application, and the date of the rendition of such decision. The record shall be kept in two classes: one for new buildings or structures, and one for alterations to existing buildings or structures. Each application for a new or altered building or structure shall be respectively and consecutively numbered in the date and order of filing, and the record numbers and the application numbers shall correspond.

Numbering of applications.

The books containing such records, and all plans, statements and other papers relating to any such application are hereby declared to be public records, and shall be open to inspection at all reasonable times, but such inspection shall not include the right to copy any plan on file in the Department of Buildings, and the copying of any filed drawing, tracing or print is hereby forbidden.

Open to public inspection.

Copying of plans forbidden.

SECTION 150.

Appeals and Modifications.

The Commissioner of Buildings shall have power, and it shall be his duty to pass upon any question relative to the mode, manner of construction, or materials to be used in the erection or alteration of any building or other structure erected or to be erected within the City of ..... which is included within the provisions of this Code and other ordinances, and the regulations of the Department of Buildings, relating to the construction, alteration or removal of buildings or other structures, and to re-

Power to vary and modify Code, etc.

quire that such mode, manner of construction or materials shall conform to the true intent and meaning of the several provisions of the said Code and other ordinances and the rules and regulations of the Department of Buildings.

On refusal to approve application.

Whenever the Commissioner of Buildings to whom such question has been submitted shall reject or refuse to approve the mode or manner of construction proposed to be followed or materials to be used in the erection or alteration of any such building or structure, or when it is claimed that the rules and regulations of the Department of Buildings or the provisions of this Code or any of the ordinances and regulations do not apply, or that an equally good and more desirable form of construction can be employed in any specific case, or when it is claimed that the true intent and meaning of this Code or any of the ordinances and regulations have been misconstrued or wrongly interpreted, the permit applied for having been refused by the Commissioner of Buildings, then the owner or lessee of such building or structure, or his duly authorized agent, may appeal from the decision of the Commissioner of Buildings to an Examining Board in any case where the amount of the total cost of the alteration or new building or structure shall exceed the sum of one thousand dollars.

Appeal may be taken.

Cost of alteration on new structures.

Examining Board.

Time limit for appeal.

The appeal authorized by this Section may be taken within ten days from the entry of a decision upon the records of the Department of Buildings by filing with the Commissioner of Buildings a notice of appeal on blanks provided for that purpose by the Department of Buildings, stating specifically the question or questions which the appellant desires to have passed upon by the Examining Board and requesting the appointment of

Notice of appeal.

an Examining Board, and accompanying the same by the sum of thirty dollars. And thereupon the Commissioner of Buildings shall appoint a disinterested and competent architect, civil engineer or builder, the applicant shall appoint a second, and the two so chosen shall select a third.

Appointment of appeal board.

The said examiners shall each take the usual oath of office before entering upon the performance of their duties. They shall meet in the office of the Commissioner of Buildings, and the applicant or his representative, or both, may appear before the said board and be heard. The board shall consider such appeal, and, as soon as practicable, render a decision thereon. The said board is hereby authorized and empowered to grant or reject such appeal, and the decision of a majority of the members of the board, reduced to writing, and addressed to the Commissioner of Buildings, shall be final and conclusive. If such decision be favorable to said petitioner, a permit shall be issued by the Commissioner of Buildings in accordance therewith. Each of the three examiners shall receive for his services ten dollars from the money deposited with the Commissioner of Buildings for that purpose.

Oath of office.

Meeting place.

Decision of board final.

Permit to issue if decision is favorable to applicant.

Payment for services of examiners.

PART XXX.

VIOLATIONS AND PENALTIES—COURTS HAVING JURISDICTION.

SECTION 151.

Violation and Penalties.

The owner or owners of any building, structure or part thereof, or wall, or any platform, staging or flooring to be used for standing or seating purposes, where any violation of this Code shall be placed, or shall exist,

Persons liable for violating the Code.

and any architect, civil engineer, builder, plumber, carpenter, mason, contractor, sub-contractor, foreman or any other person who may be employed or assist in the commission of any such violation, and any and all persons who shall violate any of the provisions of this Code or fail to comply therewith, or any requirements thereof, or who shall violate, or fail to comply with, any order or regulation made thereunder, or who shall build in violation of any detailed statement of specifications or plans, submitted and approved thereunder, or of any certificate or permit issued thereunder, shall severally, for each and every such violation and non-compliance, respectively, forfeit and pay a penalty in the sum of twenty-five dollars.

Penalty.

For violating provisions relating to chimneys, furnaces and woodwork near flues.

Except that any such persons who shall violate any of the provisions of this Code as to the construction of chimneys, fire-places, flues, hot-air pipes and furnaces, or who shall violate any of the provisions of this Code, with reference to the framing of timbers, girders, beams, trim or other woodwork in proximity to chimney flues or fire-places, shall forfeit and pay a penalty in the sum of fifty dollars.

Penalty if violation notice is not complied with.

Any and all of the aforementioned persons who, having been served with a notice as hereinafter prescribed, to remove any violation, or comply with any requirement of this Code, or with any order or regulation made thereunder, shall fail to comply with said notice within ten days after such service in the respect named in said notice shall pay an additional penalty of two hundred and fifty dollars; or after having paid the above penalty shall fail to comply with said notice within a reasonable time and shall continue to violate any requirement of this Code in the respect named in such notice, shall be guilty of a misdemeanor, punishable as elsewhere provided in this Section.

For the recovery of any said penalty or penalties an action may be brought in any municipal court, or court of record, in said city in the name of the City of .....; and whenever any judgment shall be rendered therefor, the same shall be collected and enforced, as prescribed and directed by the Code of Civil Procedure of the State of..... Collecting penalties.

Misdemeanor.

Any and all of the aforementioned persons who shall knowingly or wilfully violate, or assist in the violation of any of the provisions of the Building Code or regulations made thereunder, or any and all persons who shall continue to violate or assist in the continued violation of any of the provisions of the Building Code or regulations made thereunder, after the penalties hereinbefore imposed have been paid, shall be guilty of a misdemeanor, punishable by fine or imprisonment, or both, in the discretion of the Court. How punishable.

SECTION 152.

Courts Having Jurisdiction.

All courts of civil jurisdiction in the City of ..... shall have cognizance of and jurisdiction over any and all suits and proceedings by this Code authorized to be brought for the recovery of any penalty and the enforcement of any of the several provisions of this Code, and shall give preference to such suits and proceedings over all others, and no court shall lose jurisdiction of any action by reason of a plea that title to real estate is involved, provided the object of the action is to recover a penalty for the violation of any of the provisions of this Code. Suits and proceedings.

City Attorney to Bring Suits.

To institute actions to give force and effect to Code.

The City Attorney is authorized to institute any and all actions and proceedings, either legal or equitable, that may be appropriate or necessary for the enforcement of the provisions of this Code, and all civil courts in said city are hereby invested with full legal and equitable jurisdiction to hear, try and determine all such actions and proceedings, and to make appropriate orders and render judgment therein according to law, so as to give force and effect to the provisions of this Code.

Proceedings at Law.

To restrain, correct or remove violations.

Whenever the Commissioner of Buildings is satisfied that any building or structure, or any portion thereof, or any drainage or plumbing, the erection, construction or alteration, execution or repair of which is regulated, permitted or forbidden by this Code, is being erected, constructed, altered or repaired, or has been erected, constructed, altered or repaired, in violation of, or not in compliance with, any of the provisions or requirements of this Code, or in violation of any detailed statement of specifications or plans submitted and approved thereunder, or of any certificate or permit issued thereunder, or that any provision or requirement of this Code, or any order or direction made thereunder, has not been complied with, or that plans and specifications for plumbing and drainage have not been submitted or filed as required by this Code, the Commissioner of Buildings may in his discretion through the City Attorney institute any appropriate action or proceeding, at law or in equity, to restrain, correct or remove such violation, or the execution of any work thereon, or to restrain or correct the erection or alteration of, or to require the removal of, or to prevent

To restrain or correct the erection or alteration of, or removal of, or prevent occupation of unlawful structures.

the occupation or use of, the building or structure erected, constructed, or altered, in violation of, or not in compliance with, any of the provisions of this Code, or with respect to which the requirements of this Code, or of any order or direction made pursuant to any provisions contained in this Code, shall not have been complied with.

To restrain by injunction further progress of unlawful work on buildings.

In any such action or proceeding the City of ..... by the City Attorney may, at the request of the Commissioner of Buildings, and on his affidavit setting forth the facts, apply to any court of record in said city, or to a judge or justice thereof, for an order enjoining and restraining all persons from doing, or causing or permitting to be done, any work in or upon such building or structure, or in or upon such part thereof as may be designated in said affidavit, or from occupying or using said building or structure or such portion thereof as may be designated in said affidavit for any purpose whatever, until the hearing and determination of said action and the entry of final judgment therein.

Courts may make orders with or without notice.

The court, or judge or justice thereof, to whom such application is made, is hereby authorized forthwith to make any or all of the orders above specified, as may be required in such application, with or without notice, and to make such other or further orders or directions as may be necessary to render the same effectual.

No liability for damages when acting in good faith.

No officer of said Department of Buildings, acting in good faith and without malice, shall be liable for damages by reason of anything done in any such action or proceeding.

Undertaking not required.

No undertaking shall be required as a condition to the granting or issuing of such injunction order, or by reason thereof.

Judgment Becomes a Lien Upon Premises.

From date of filing notice of lis pendens.

All courts in which any suit or proceeding is instituted under this Code, shall upon the rendition of a verdict, report of a referee, or decision of a judge or justice, render judgment in accordance therewith; and the said judgment so rendered shall be and become a lien upon the premises named in the complaint in any such action, to date from the time of the filing in the County Clerk's office in the City of ..... where the property affected by such action, suit, or proceeding is located, of a notice of lis pendens therein; which lien may be enforced against said property, in every respect, notwithstanding the same may be transferred subsequent to the filing of the said notice.

Lis Pendens.

What the notice shall consist of.

Said notice of lis pendens shall consist of a copy of the notice issued by the Commissioner of Buildings requiring the removal of the violation and a notice of the suit or proceedings instituted, or to be instituted thereon, and said notice of lis pendens may be filed at any time after the service of the notice issued by the Commissioner of Buildings as aforesaid, provided he may deem the same to be necessary, or is satisfied that the owner of the property is about to transfer the same to avoid responsibility for having violated the provisions of this Code or some one of its provisions.

Canceling Lis Pendens.

Method of vacating or canceling any notice of lis pendens.

Any notice of lis pendens filed pursuant to the provisions of this Code, may be vacated and canceled of record, upon an order of a judge or justice of the court in which such suit or proceeding was instituted or is pending, or upon the consent in writing of the City Attorney, and the clerk of the said county where such no-

tice is filed, is hereby directed and required to mark any such notice of lis pendens and any record or docket thereof as vacated and canceled of record, upon the presentation and filing of a certified copy of an order as aforesaid, or of the consent, in writing, of said City Attorney.

Costs in Suits.

No costs in suit unless specially allowed against defendant.

In no case shall the said Department of Buildings or any officer thereof, or the corporation of the City of ....., or any defendant, be liable for costs in any action, suit or proceedings that may have been, or may hereafter be, instituted or commenced in pursuance of this Code, unless specially ordered and allowed against any defendant or defendants, by a court or justice, in the course of such action, suit or proceeding.

SECTION 153.

Notices of Violations of Code; Service of Papers.

Notices of violation, by whom served.

All notices of the violation of any of the provisions of this Code, and all notices directing anything to be done, required by this Code, and all other notices that may be required or authorized to be issued thereunder, including notice that any building, structure, premises, or any part thereof, are deemed unsafe or dangerous, shall be issued by the Commissioner of Buildings, and shall have his name affixed thereto, and may be served by any officer or employe of the Department of Buildings or by any person authorized by the said Department.

How served.

All such notices, and any notice or order issued by any court in any proceeding instituted pursuant to this Code to restrain or remove any violation, or to enforce compliance with any provision or requirement of this Code, may be served by delivering to and leaving

a copy of the same with any person or persons violating, or who may be liable under any of the several provisions of this Code, or to whom the same may be addressed, and if such person or persons cannot be found after diligent search shall have been made for him or them, then such notice or order may be served by posting the same in a conspicuous place upon the premises where such violation is alleged to have been placed or to exist, or to which such notice or order may refer, or which may be deemed unsafe or dangerous, which shall be equivalent to a personal service of said notice or order upon all parties for whom such search shall have been made.

Notice may be posted.

Such notice or order shall contain a description of the building, premises or property on which such violation shall have been put or may exist, or which may be deemed unsafe or dangerous, or to which such notice or order may refer.

Notice of violation to contain description of building or premises.

If the person or persons or any of them, to whom said notice or order is addressed, do not reside in the State of ....., and have no known place of business therein, the same may be served by delivering to, and leaving with, such person or persons, or either of them, a copy of said notice or order, or if said person or persons cannot be found within said State after diligent search, then by posting a copy of the same in manner as aforesaid and depositing a copy thereof in a post-office in the City of ....., inclosed in a sealed wrapper addressed to said person or persons at his or their last known place of residence, with the postage paid thereon; and said posting and mailing a copy of said notice or order shall be equivalent to personal service of said notice or order.

Notice by mail to owners residing out of state.

PART XXXI.

UNSAFE BUILDINGS — SURVEYS — COURT PROCEEDINGS.

SECTION 154.

Unsafe Buildings.

To be removed or made safe.

Any building or buildings, part or parts of a building, staging or other structure in the City of ....., that from any cause may now be, or shall at any time hereafter become dangerous or unsafe, may be taken down and removed, or made safe and secure, in the manner following:

Reports of unsafe buildings to be docketed.

Immediately upon such unsafe or dangerous building or buildings, or part or parts of a building, staging or structure being so reported by any of the officers of said Department of Buildings, the same shall be immediately entered upon a docket of unsafe buildings to be kept by the Commissioner of Buildings;

Notice of requirement may be served on representative of owner.

And the owner, or some one of the owners, executors, administrators, agents, lessees, or any other person or persons who may have a vested or contingent interest in the same, may be served with a printed or written notice containing a description of the premises or structure deemed unsafe or dangerous, requiring the same to be made safe and secure, or removed, as the same may be deemed necessary by the Commissioner of Buildings,

Assent or refusal to be given.

Which said notice shall require the person or persons thus served to immediately certify to the said Commissioner his or their assent or refusal to secure or remove the same.

SECTION 155.

Surveys on Unsafe Buildings.

Time allowed to make premises safe.

If the person or persons so served with notice shall immediately certify his or their assent to the securing or removal of said unsafe or dangerous building, premises or structure, he or they shall be allowed until one o'clock P. M., of the day following the service of such notice, in which to commence the securing or removal of the same; and he or they shall employ sufficient labor and assistance to secure or remove the same as expeditiously as the same can be done.

Upon refusal or neglect to comply with requirements.

But upon his or their refusal or neglect to comply with any of the requirements of said notice so served a further notice shall be served upon the person or persons heretofore named, and in the manner heretofore

Survey to be held.

prescribed, notifying him or them that a survey of the premises named in the said notice will be made at the time and place therein named, which time may not be less than twenty-four hours nor more than three days from the time of the service of said notice, by three competent persons—

Surveyors.

An official of Building Department.

One of whom shall be the Commissioner of Buildings, or a Superintendent of Buildings, or an Inspector, designated in writing by said Commissioner.

An architect, engineer or builder appointed by Commissioner of Buildings.

Another of whom shall be an architect, civil engineer or builder of at least ten years' practice in the City of ....., appointed by the Commissioner of Buildings, but no one such architect, civil engineer or builder shall be so appointed to serve upon any survey oftener than once in any calendar month.

Another of whom shall be appointed by the person or persons thus notified, and who shall be a practical builder, architect, or civil engineer, upon whose neglect or refusal to appoint such surveyor, however, the said other two surveyors may make such survey; Architect, engineer or builder representing owner.

And in case of a disagreement of the latter, they shall appoint a third person to take part in such survey, who shall also be a practical builder, architect or civil engineer of at least ten years' practice, and the decision of the said surveyor shall be final; In case of disagreement a third surveyor to be appointed.

And that in case the said premises shall be reported unsafe or dangerous under such survey, the said report will be placed before a court therein named having jurisdiction to the extent of one thousand dollars, and that a trial upon the allegations and statements contained in said report, be the report of the said surveyors more or less than is contained in the said notice of survey, will be had before said court, at a time and place therein named, to determine whether said unsafe or dangerous building or premises shall be repaired and secured or taken down and removed; Report of surveyors.

And a report of such survey, reduced to writing, shall constitute the issue to be placed before the court for trial. Issue for trial.

A copy of said report of survey shall be posted on the building by the persons holding the survey, immediately on their signing the same. Posting of surveyors' report.

Pay of Architect, Civil Engineer or Builder on Survey.

The architect, civil engineer or builder appointed by the Commissioner of Buildings, as hereinbefore provided, who may act on any survey called in accordance with the provisions of this Code, shall be entitled to, and receive the sum of twenty-five dollars, to be paid by Amount and method of payment.

the City Treasurer upon the voucher of the Commissioner of Buildings.

Cause of Action.

To be brought in the name of the city.

And a cause of action is hereby created for the benefit of the City of ..... against the owner or owners of said building, staging or structure, and of the lot or parcel of land on which the same is situated, for the amount so paid with interest, which shall be prosecuted in the name of the City of ..... by the City Attorney. The amount so collected shall be paid over to the City Treasurer in reimbursement of the amounts paid by him as aforesaid.

SECTION 156.

Court Proceedings.

Report of surveyors to be submitted to court.

Whenever the report of any such survey, had as aforesaid, shall recite that the building, premises or structure thus surveyed is unsafe or dangerous, the City Attorney of the City of ..... shall at the time in the said notice named, place said notice and report before the judge or justice holding a special term of the court, in the said notice named, which said judge or justice shall immediately proceed

Trial of issue.

to obtain and impanel a jury, and to the trial of said issue before said jury, whose verdict shall be conclusive and final, and shall try said issue without adjournment, except as may be necessary from day to day, giving precedence to the trial of this issue over every other business,

And said judge or justice shall have power to impanel a jury for that purpose from any jurors in attendance upon said court, or in case sufficient jurors shall not be in attendance, then from any jurors that may be summoned for that purpose; and said judge or justice shall have power to summon jurors for that purpose; and any such suit or proceeding commenced before a judge or justice may be continued before another judge or justice of the same court; Jury.

A jury trial may be waived by the default of the defendant or defendants to appear at the time and place named in the said notice, or by agreement, and in such case the trial may be by court, judge, justice, or referee, whose report or decision in the matter shall be final; Jury trial may be waived.

And upon the rendition of a verdict or decision of the court, judge, justice or referee, if the said verdict or decision shall find said building, premises or structure to be unsafe or dangerous, the judge or justice trying said cause, or to whom the report of the referee trying said cause shall be presented, shall immediately issue a precept out of said court, directed to the Commissioner of Buildings, reciting said verdict or decision, and commanding him forthwith to repair and secure or take down or remove, as the case may be, in accordance with said verdict or decision, said unsafe or dangerous building, buildings, part or parts thereof, staging, structure or other premises that shall have been named in the said report; Verdict. Precept.

And said Commissioner of Buildings shall immediately thereupon proceed to execute said precept as therein directed, and may employ such labor and assistance and furnish such materials as may be necessary for that purpose, and after having done so, said Commissioner of Buildings shall make return of said precept, with an indorsement of the action thereunder Execution of precept.

Costs.

and the cost and expenses thereby incurred, to the judge or justice then holding the said special term of the said court, and thereupon said judge or justice shall tax and adjust the amount indorsed upon said precept, and shall adjust and allow disbursements of said proceeding, together with the preliminary expenses of searches and surveys, which shall be inserted in the judgment in said action or proceeding, and shall render judgment for such amount, and for the sale of the said premises in the said notice named, together with all the right, title and interest that the person or persons, or either of them, named in the said notice had in the lot, ground or land upon which the said building or structure was placed, at the time of the filing of a notice of lis pendens in the said proceedings, or at the time of the entry of judgment therein to satisfy the same, which shall be in the same manner and with like effect as sales under judgment in foreclosure of mortgages;

Judgment.

Lis pendens.

Sale of premises.

Requisition on Comptroller to meet expenses of suits.

And in and about all preliminary proceedings, as well as the carrying into effect any order of the court or any precept issued by any court, said Commissioner of Buildings may make requisition upon the City Treasurer of the City of..... for such amount or amounts of money as shall be necessary to meet the expenses thereof; and upon the same being approved by any judge or justice of the court from which the said order or precept was issued and presented to said City Treasurer, he shall pay the same, and for that purpose shall borrow, and raise, upon revenue bonds to be issued as provided in the Charter of the City of.....the several amounts that may from time to time be required, which shall be reimbursed by the payment of the amount and interest at six per cent., out of the judgment or judg-

ments obtained as aforesaid, if the same shall be collected.

If issue is not tried at time named.

In case said issue shall not be tried at the time specified in said notice, or to which the trial may be adjourned, the same may be brought to trial at any time thereafter by the said Commissioner of Buildings, without a new survey, upon not less than three days' notice of trial to the person or persons upon whom the original notice was served, or to his or their attorney, which notice of trial may be served in the same manner as said original notice.

Notice of lis pendens.

The notice of lis pendens provided for in this section shall consist of a copy of said notice of survey, and shall be filed in the office of the County Clerk in the City of....., in the county where the property affected by such action, suit or proceeding is located.

Owner allowed to execute precept.

Provided, nevertheless, that immediately upon the issuing of said precept, the owner or owners of said building, staging or structure, or premises, or any party interested therein, upon application to the Commissioner of Buildings, shall be allowed to perform the requirements of said precept at his or their own proper cost and expense, provided the same shall be done immediately and in accordance with the requirement of said precept, upon the payment of all costs and expenses incurred up to that time,

Authority to modify precept.

And provided, further, that the Commissioner of Buildings shall have authority to modify the requirements of said precept upon application to him therefor, in writing, by the owner or owners of said building, staging or structure, or his or their representative, when he shall be satisfied that such change shall secure equally well the safety of said building, staging or structure.

SECTION 157.

Applications for Order to Remove Violations and to Vacate Buildings.

Proceedings in case notice is not complied with.

In case any notice or direction authorized to be issued by this Code is not complied with within the time designated in said notice, the City of ..... by the City Attorney may, at the request of the Commissioner of Buildings, apply to the Supreme Court of ..... at a special term thereof, for an order directing said Commissioner to proceed to make the alterations or remove the violation or violations, as the same may be specified in said notice or direction.

When notice requiring fire-escapes is not complied with, order of court may be obtained to vacate building.

Whenever any notice or direction so authorized, shall have been served as directed in this Code, and the same shall not have been complied with within the time designated therein, the City Attorney may, at the request of the Commissioner of Buildings, in addition to, or in lieu of the remedy last above provided, apply to the Supreme Court of ....., at a special term thereof, for an order directing the said Commissioner to vacate such building or premises, or so much thereof as said Commissioner may deem necessary, and prohibiting the same to be used or occupied for any purpose specified in said order until such notice shall have been complied with.

Expenses, etc., in carrying out order of court to be a lien upon premises.

The expenses and disbursements incurred in the carrying out of any said orders, shall become a lien upon said building or premises named in the said notice from the time of filing of a copy of the said notice, with a notice of the pendency of the action or proceeding as provided in this Code, taken thereunder, in the office of the clerk of the county where the property affected by such action, suit or proceeding is located; and the

said Supreme Court, or a judge or justice thereof, to whom application shall be made, is hereby authorized and directed to grant any of the orders above named, and to take such proceedings as shall be necessary to make the same effectual, and any said judge or justice to whom application shall be made is hereby authorized and directed to enforce such lien in accordance with the mechanics' lien laws applicable to the City of .....;

Authority to enforce lien.

And in case any of the notices herein mentioned shall be served upon any lessee or party in possession of the building or premises therein described, it shall be the duty of the person upon whom such service is made to give immediate notice to the owner or agent of said building named in the notice, if the same shall be known to the said person personally, if such person shall be within the limits of the City of ....., and his residence known to such person, and if not within said city, then by depositing a copy of said notice, in any post-office in the City of ....., properly inclosed and addressed to such owner or agent, at his then place of residence, if known, and by paying the postage thereon;

Duty of person upon whom service of notice may be made.

Notice by mail.

And in case any lessee or party in possession shall neglect or refuse to give such notice as herein provided, he shall be personally liable to the owner or owners of said building or premises for all damages he or they shall sustain by reason thereof.

Liability of a lessee or person in possession.

PART XXXII.

RECOVERY OF BODIES UNDER FALLEN BUILDINGS.—BUILDINGS IN DANGER OF FALLING.—STOPPAGE OF WORK ON BUILDINGS.

SECTION 158.

Recovery of Bodies Under Fallen Buildings.

When persons are buried under ruins.

In case of the falling of any building or part thereof in the City of....., where persons are known or believed to be buried under the ruins thereof, it shall be the duty of the Commissioner of the Fire Department to cause an examination of the premises to be made for the recovery of the bodies of the killed and injured.

City departments to co-operate.

Whenever, in making such examination, it shall be necessary to remove from the premises any debris, it shall be the duty of the Commissioners of any and all other of the Departments of the City of ....., when called upon by the Department of Buildings to co-operate, and to provide a suitable and convenient dumping place for the deposit of such debris.

Buildings in Immediate Danger of Falling.

To be made temporarily safe.

In case there shall be in the opinion of the Commissioner of Buildings, actual and immediate danger of the falling of any building or part thereof so as to endanger life or property, said Commissioner shall cause the necessary work to be done to render said building or part thereof temporarily safe until the proper proceedings can be taken as in the case of an unsafe building as provided for in this Code.

The Commissioner of Buildings is hereby authorized and empowered in such cases, and also where any building or part thereof has fallen, and life is endangered by the occupation thereof, to order and require the inmates and occupants of such building or part thereof to vacate the same forthwith.

Authority to vacate buildings.

And said Commissioner may, when necessary for the public safety, temporarily close the sidewalks and streets adjacent to such building or part thereof, and prohibit the same from being used, and the Police Department, when called upon by the said Commissioner of Buildings to co-operate, shall enforce such orders or requirements.

Authority to temporarily close sidewalks and streets.

To Perform the Humane Work.

For the aforesaid purposes the said Commissioner of the Fire Department, or the Commissioner of the Department of Buildings, as the case may be, shall employ such laborers and materials as may be necessary to perform said work as speedily as possible.

City to pay expenses of recovering bodies and avoiding disaster from falling buildings.

SECTION 159.

Stoppage of Work on Buildings.

In case there shall be, in the opinion of the Commissioner of Buildings, danger to life or property by reason of any defective or illegal work, or work in violation of or not in compliance with any of the provisions or requirements of this Code, the Commissioner of Buildings or such person as may be designated by him shall have the right, and he is hereby authorized and empowered to order all further work to be stopped in and about said building, and to require all persons in and about said building forthwith to vacate the same,

Power conferred on commissioner to stop work on buildings dangerous to life and property.

and to cause such work to be done in or about the building as in his judgment may be necessary to remove any danger therefrom. And the Commissioner of Buildings may, when necessary for the public safety, temporarily close the sidewalks and streets adjacent to said building, or part thereof, and the Police Department, when called upon by the Commissioner of Buildings to co-operate, shall enforce such orders or requirements.

PART XXXIII.

FUND FOR USE AND BENEFIT OF THE DEPARTMENT OF BUILDINGS.

SECTION 160.

Fund for Use and Benefit of the Department of Buildings.

Conducting legal proceedings

The City Attorney shall sue for and collect all penalties and take charge of and conduct all legal proceedings imposed or provided for by this Code; and all suits or proceedings instituted for the enforcement of any of the several provisions of the preceding sections of this Code or for the recovery of any penalty thereunder shall be brought in the name of the City of ....., by the City Attorney, to whom all notices of violation shall be returned for prosecution, and it shall be his duty to take charge of the prosecution of all such suits or proceedings, collect and receive all moneys that may be collected upon judgments, suits or proceedings so instituted, or which may be paid by any parties who have violated any of the provisions of this Code, and upon settlement of judgment and removal of violations thereunder, execute satisfaction therefor.

Suits to be brought in the name of the city.

He shall on the first day of each and every month render to the Commissioner of Buildings an account of such penalties and costs received by him, and shall pay over monthly the amount of such penalties and costs so collected, less the amount of all necessary disbursements incurred or paid in said suits, to the City Treasurer of the City of ..... as a fund for the use and benefit of the Department of Buildings for the purpose of paying any expense incurred by said Department under Sections 158 and 159 of this Code, and also for the purpose of carrying into effect any order or precept issued by any court, or judge or justice thereof, in this Code named, to the Commissioner of Buildings.

Monthly accounts.

Monthly payments to city treasurer.

And upon the requisition of the Commissioner of Buildings said City Treasurer shall pay such sum or sums as may be allowed and adjusted by any court of record, or a judge or justice thereof, for such purposes, as far as the same may be in his hands.

Requisition of Commissioner of Buildings.

PART XXXIV.

SEAL.— BADGES.— UNIFORMS. — OFFICERS OF DEPARTMENT OF BUILDINGS MAY ENTER BUILDINGS.—OFFICERS OF FIRE DEPARTMENT MAY ENTER BUILDINGS.

SECTION 161.

Seal.

The Commissioner of Buildings shall adopt a seal and direct its use in the Department of Buildings.

Official seal.

Badges.

Suitable metal badges of office shall be provided by the Department of Buildings, each badge to be numbered, for all the officials of said Department having

To be conspicuously displayed.

the right to enter buildings or premises, and to be worn conspicuously by them during their hours of public service. Said badges shall be and remain the property of the Department of Buildings.

Uniforms.

To be worn during hours of public duty.

The Commissioner of Buildings may prescribe a suitable uniform to be worn by each and all of the beforementioned officials during their hours of public service.

Officers of Department of Buildings May Enter Buildings and Premises.

In the necessary performance of their business.

All the officials of the Department of Buildings, so far as it may be necessary for the performance of their respective duties, shall have the right to enter any building or premises in said city, upon showing their badge of office.

SECTION 162.

Officers of Fire Department; Right to Enter Buildings, etc., for Purposes of Examination.

Buildings, structures and premises.

The Commissioner of the Fire Department and his officers or agents, under the direction of the said Commissioner, or either of them, are hereby empowered at any and all times to enter into all existing buildings, structures and premises and all buildings and structures in course of construction or alteration in the City of ..... for the purpose of ascertaining all violations of any of the provisions of this Code, or of any other ordinance of the said city relating to stoves and pipes thereto, ranges, furnaces and heating apparatus of any kind whatsoever, including chimneys, flues and pipes with which the same may be connected,

engine rooms, boiler rooms, ovens, kettles, chemical apparatus, and also unlawful quantities of explosives, explosive compounds, petroleum and coal oils, chemicals, vegetable products, ashes, combustible materials and refuse matter, or other things which in his or their opinion may be dangerous in causing or promoting fire or dangerous to the firemen or occupants in case of fire, and of ascertaining all other violations of any of the provisions of this Code or of any other ordinance of the said city; and upon finding that any such building or structure is defective or dangerous to life or property or liable to become so in the event of panic or fire from any cause, including the yards and premises connected with any such building or structure, the Commissioner may thereupon issue orders or special directions, either printed or written, directing the owner, lessee or occupants to alter, remove or remedy the same in such manner and within such reasonable time as may be necessary, and in respect thereto may authorize and direct the use of such materials and appliances as shall be deemed proper and necessary; and in case of neglect or refusal so to do within the time prescribed by such orders or directions said Commissioner shall cause said alteration, removal, or other necessary act or work to be done, and the expense thereof shall be charged to the party so offending, to be sued for and recovered in the manner herein provided for the recovery of fines and penalties under this Code or other city ordinances.

Orders and directions.

In case of neglect or refusal to comply.

Any complaint made to the Commissioner of the Fire Department by any citizen that any building, structure or premises are in a dangerous or unsafe condition shall be investigated by said Commissioner, and if upon investigation the complaint is well founded the said Commissioner shall take action as herein provided.

Complaints to be investigated.

PART XXXV.

EXISTING SUITS AND LIABILITIES—INVALIDITY OF ONE SECTION NOT TO INVALIDATE ANY OTHER.

SECTION 163.

Existing Suits and Liabilities.

Not to affect past rights and liabilities.

Nothing in this Code contained shall be construed to affect any suit or proceeding now pending in any court, or any rights acquired, or liability incurred, nor any cause or causes of action accrued or existing, under any act or ordinance repealed hereby. Nor shall any right or remedy of any character be lost, impaired or affected by this Code.

SECTION 164.

Invalidity of One Section Not to Invalidate Any Other.

In this Code.

The invalidity of any section or provision of this Code shall not invalidate any other section or provision thereof.

PART XXXVI.

ORDINANCES REPEALED—DATE WHEN ORDINANCE TAKES EFFECT.

SECTION 165.

Repealing Section.

Relating to buildings.

All former ordinances of the City of ..... affecting or relating to the Construction, Alteration or

Removal of Buildings or other Structures, and all other ordinances or parts thereof inconsistent herewith, are hereby repealed.

SECTION 166.

Date When Ordinance is to Take Effect.

This ordinance, to be known as the Building Code, shall take effect sixty days after its approval by the Mayor.

ALPHABETICAL INDEX

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NATIONAL BOARD STANDARDS.

There have, from time to time, been issued by the National Board of Fire Underwriters, standard specifications covering various types of fire-protecting apparatus and appliances, among which are the following:

National Electrical Code as recommended by the Underwriters' National Electrical Association, together with a list of electrical fittings,
Automatic Sprinkler Rules,
Underwriter Fire Pumps,
Specifications for Hydrants,
Specifications for Water Pipes,
Specifications for Hose,
Fire Doors and Shutters,
Wire Glass and Framing of Same,
Watchman's Clocks,
Signalling Systems,
Fire Pails, Waste and Ash Cans,
Chemical Fire Extinguishers, both Hand and Stationary,
Fuel Oil Storage,
Kerosene Oil Systems,
Gasolene Lighting,
Gasolene Stoves,
Ascetylene Gas Generators,
Gasolene Engines.

Where the word "standard" or "approved" is used throughout this Building Code as relating to fire-protection devices of any character, reference is made to such devices as conform to the various specifications or standards enumerated above which have been issued by the National Board of Fire Underwriters.

Any of the standards referred to above can be obtained from the National Board of Fire Underwriters, No. 32 Nassau Street, New York City, upon application.

NAME (PRINT) Rossell, EGO